

Illinois State University

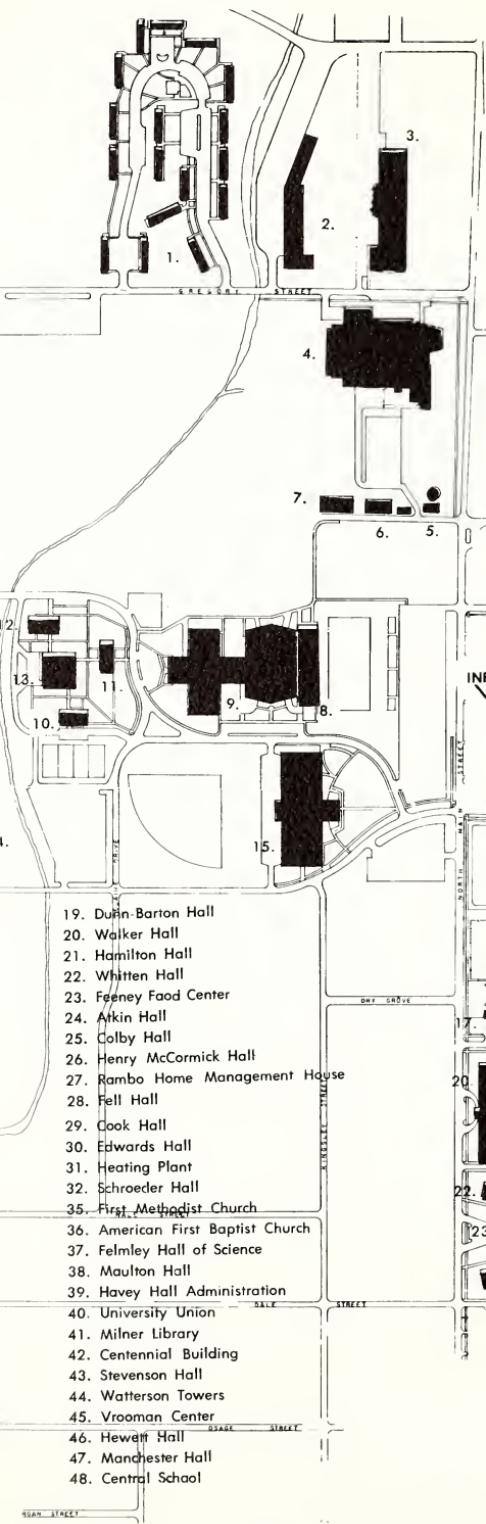
BULLETIN

NORMAL, ILLINOIS



1968-69
GRADUATE CATALOG





Illinois State University CAMPUS MAP



1. Cardinal Court
2. Carter Harris Physical Plant
3. John W. Green Center for Food Services
4. University High School
5. Hudelson Museum
6. Machinery Hall (temporary)
7. Judging Pavilion (temporary)
8. Hancock Stadium
9. Hixton Physical Education Building
10. Wilkins Hall
11. Haynie Hall
12. Wright Hall
13. Linkins Center
14. ~~Weston School~~ (Museum)
15. Turner Hall
16. Metcalf School
17. Fairchild Hall
18. Rachel Cooper Health Center

INFORMATION

INFORMATION

19. Duff-Barton Hall
20. Walker Hall
21. Hamilton Hall
22. Whitten Hall
23. Feeney Food Center
24. Atkins Hall
25. Colby Hall
26. Henry McCormick Hall
27. Rambo Home Management House
28. Fell Hall
29. Cook Hall
30. Edwards Hall
31. Heating Plant
32. Schroeder Hall
35. First Methodist Church
36. American First Baptist Church
37. Felmley Hall of Science
38. Maulton Hall
39. Havey Hall Administration
40. University Union
41. Milner Library
42. Centennial Building
43. Stevenson Hall
44. Watterson Towers
45. Vrooman Center
46. Hewett Hall
47. Manchester Hall
48. Central School

**Illinois State University
BULLETIN**

GRADUATE CATALOG—1968-1969

**STATE OF ILLINOIS—LAND OF LINCOLN
OTTO F. KERNER, GOVERNOR**

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University Calendar

1968, SUMMER SESSIONS

June 17	Opening of and registration for eight - week summer session
June 21	Last day for late registration and course changes
June 28	Last day to apply for graduation in August
July 12	Foreign language examinations
July 13	Comprehensive examination—8:00-12:00
July 26	Last day to drop a course
August 6	Last day to file theses for August 9 graduation
August 8-9	Final examinations for eight-week session
August 9	Summer commencement; close of eight-week session
August 12	Opening of post-session; classes begin, 2:00 p.m.

1968, FIRST SEMESTER

September 9	Registration for late afternoon, evening, and Saturday courses according to a published schedule
September 10-12	Registration according to a published schedule
September 13	Classes begin
September 21	Last day for late registration and course changes
September 26	Last day to apply for 2nd semester student teaching assignment
October 4	Foreign language examinations
October 19	Homecoming
October 25	Last day to apply for graduation in January
November 27	Thanksgiving vacation begins, 11:00 a.m.
December 2	Thanksgiving vacation ends, 8:00 a.m.
December 13	Last day to drop a course
December 20	Christmas vacation begins after scheduled classes
1969	
January 6	Christmas vacation ends, 8:00 a.m.
January 11	Comprehensive examination, 1:00-5:00
January 16-22	Final examinations for first semester
January 22	Last day to file theses for January 25 graduation

1969, SECOND SEMESTER

January 27	Registration for late afternoon, evening and Saturday courses according to a published schedule
January 28-30	Registration according to a published schedule
January 31	Classes begin
February 8	Last day for late registration and course changes
March 7	Foreign language examinations
March 14	Last day to apply for June graduation
March 28	Spring vacation begins after scheduled classes
April 8	Spring vacation ends, 8:00 a.m.
May 9	Last day to drop a course
May 10	Comprehensive examination, 1:00-5:00
May 28-29	Final examinations for second semester
May 30	Memorial Day Holiday
May 31-June 4	Final examinations for second semester
June 4	Last day to file theses for June 7 graduation
June 7	One-hundred-tenth Annual Commencement

1969, SUMMER SESSIONS

June 16-August 8	Eight-week summer session
August 11	Opening of post session

Board of Regents

NORRIS L BROOKENS (Urbana)	Chairman
NOBLE J. PUFFER (Barrington)	Vice Chairman
FREDERICK H. McKELVEY (Springfield)	Acting Secretary

Appointed Members

1967-1969

GORDON H. MILLAR	Rock Island
NOBLE J. PUFFER	Barrington
LOREN M. SMITH	Rockford

1967-1971

GUY E. CORNWELL	Chicago
MORTON H. HOLLINGSWORTH	Joliet
KENNETH W. LUND	Oak Park

1967-1973

NORRIS L BROOKENS, M.D.	Urbana
PERCY L. JULIAN	Oak Park
MRS. THOMAS D. MASTERS	Springfield

Ex-officio Member

RAY PAGE, Superintendent of Public Instruction	Springfield
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FREDERICK H. McKELVEY, Acting Executive Officer	Springfield
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Illinois State University is governed by the Board of Regents. The Board consists of ten members, nine appointed by the Governor for terms of six years and the Superintendent of Public Instruction who is ex-officio.

Officers of the University

THE PRESIDENCY

President	Samuel E. Braden
Vice President of the University and Dean of Faculties	Richard R. Bond
Vice President of the University and Dean of Administrative Services	Eric H. Johnson
Vice President of the University and Dean of Information and Research Services	James L. Fisher
Vice President of the University and Dean of Special Services, Director, Bureau of Appointments	Harold E. Gibson
Vice President of the University and Dean of Student Services	Richard E. Hulet

INSTRUCTIONAL OFFICERS FOR GRADUATE PROGRAMS

Associate Dean of Faculties and Director of the Summer Session	Francis B. Belshe
Dean of the Graduate School and Chairman of the Graduate Council	Arlan C. Helgeson
Dean of the College of Applied Science and Technology	Charles B. Porter
Dean of the College of Arts and Sciences	James K. Olsen
Acting Dean of the College of Business	Lewis R. Toll
Dean of the College of Education	Henry J. Hermanowicz
Director of Admissions	Howard J. Ivens
Director of Extension and Field Services	Francis R. Brown
Director of Sponsored Research Services	Eric R. Baber

MEMBERS OF THE GRADUATE COUNCIL

Admissions Committee

Douglas Poe	(1971)
Joe W. Kraus	(1970)
Fred D. Kagy	(1970)
William J. Gnagey	(1969)
John E. Crew	(1968)
Stanley C. Wold	(1968)*

Membership Committee

Anthony E. Liberta	(1971)
Eric R. Baber	(1970)
Richard Allen	(1970)
Thomas E. Comfort	(1969)
Thaddeus C. Ichniowski	(1968)
Leonard F. Bruening	(1968)*
Margaret Jones	(1968)

Curriculum Committee

Dale B. Vetter	(1971)
Irwin Spector	(1970)
Helen M. Cavanagh	(1970)
Paul F. Mattingly	(1969)
Charles B. Porter	(1968)
Kenneth L. Fitch	(1968)

Research Committee

Robert C. Duty	(1971)
Elwood F. Egelston	(1970)
John L. Frehn	(1970)
Stanley S. Marzolf	(1969)
Vernon C. Pohlmann	(1968)
Herman E. Brockman	(1968)

*Resigned, 1967

The University

Illinois State University is located in the City of Normal, which, together with the adjacent City of Bloomington, forms a community of nearly 60,000 people. The cities lie in central Illinois, approximately 125 miles from Chicago.

Founded as the Illinois State Normal University in 1857, the University was the first state supported institution for higher education in Illinois and the second school for teacher education to be established west of the Allegheny mountains.

Currently the University enrolls more than 11,000 students and offers a wide variety of programs through its colleges of Applied Sciences and Technology, Arts and Sciences, Business, the College of Education, several departments not affiliated with colleges, and the Graduate School.

Formerly governed by the Board of Governors of State Colleges and Universities, the University was placed under the governance of the Board of Regents in 1967, along with Northern Illinois University.

The Graduate School

The University began offering graduate work in 1943, when it introduced master's degree programs in several departments. Graduate work has expanded gradually since that time, with doctoral work being introduced in 1962.

Today the Graduate School offers master's degree work in more than thirty academic fields and professional education areas and offers a sixth year, Specialist in Education, degree in Educational Administration. Doctoral programs are offered in Art, Biological Sciences and Educational Administration.

It is the chief aim of the Graduate School to provide an atmosphere in which competent students may join a qualified faculty in extending their fields of knowledge, and where they may share experience in research leading to professional improvement and scholarly achievement.

Accreditation

Illinois State University is accredited on the master's level by the North Central Association of Colleges and Secondary Schools and the National Council for Accreditation of Teacher Education. Its doctoral programs were granted preliminary accreditation by the North Central Association in June, 1964, and its sixth year and doctoral programs in educational administration were granted provisional accreditation by the National Council for the Accreditation of Teacher Education in 1966. The University holds institutional memberships in the American Council on Education, the American Association of Colleges for Teacher Education, and the Council of Graduate Schools in the United States.

Graduate Faculty

The graduate faculty numbers approximately 300 members with doctor's degrees, or appropriate degrees and contributions in the creative arts. The graduate faculty members are listed in this catalog.

The competence of the graduate faculty is not measured in terms of degrees alone, but by the excellence of work in classrooms and laboratories. Many staff members have offered graduate courses in other colleges and universities. Membership and participation in professional organizations, and learned societies, as well as authorship of books, monographs, and articles, have all combined to provide recognition of many staff members as authorities in their fields.

The Campus

Together, the adjacent east and west campuses of the University comprise an area of approximately 200 acres. An additional 450 acres are taken up in a university golf course and the university farm. About forty buildings house the classrooms, laboratories, library, offices, gymnasiums, and residence halls of the University.

Current campus development includes a \$3.5 million Adlai E. Stevenson Humanities building, scheduled for completion in 1968. Watterson Towers, a 27 story residence hall group on the east campus, is also under construction. A map of the campus is found on the inside cover of this catalog.

Milner Library

Illinois State University possesses one of the finest libraries among the smaller state universities of the Mid-West. Its collection includes 321,050 volumes, 14,798 reels of microfilm, and 5,303 units of microcard and microprint. Subscriptions to 3,732 periodicals and serial titles are currently received.

The Library is a depository for U.S. governmental publications. More than 116,000 government publications are available in the Documents Reading Room (Room 105) and the adjacent stack area. Publications of the State of Illinois, selected publications from adjacent states, and microform editions of the publications of the United Nations and the Organization of American States are also available. Other special materials include a Map Collection of approximately 92,000 maps (Room 110), and a Teaching Materials Collection (Room 204). The Listening Room (Room 212) contains 4,000 recordings of music and literature. The Special Collections of the library include extensive files of University archives and growing collections of manuscripts and rare books.

Laboratory Schools

The Thomas Metcalf School and the University High School serve as laboratory schools for the University and offer opportunities for observation and teaching for those preparing to teach in elementary and secondary schools.

Facilities in special education are made available in Fairchild Hall. This building was especially designed for education in areas involving the mentally retarded, the physically handicapped, the partially sighted and blind, the deaf and hard of hearing, and those requiring speech correction. There are also facilities for psychological services, including testing and counseling.

Semester Plan and Summer Sessions

The University operates on the semester plan and provides, in addition to its fall and spring semesters, two summer sessions—one session of eight weeks and a post session of one, two, or three weeks. More than half of the persons in attendance are teachers who wish to continue their education during the summer. A student receives the same instruction in the summer as in the regular academic year.

During the post session, which follows the eight week summer session, a student may register for a one, two, or three-hour course. One-hour courses continue for one week, two-hour courses for two weeks, and three-hour courses for three weeks.

Student teaching and internship facilities are available during the eight-week summer session for those who are qualified.

A graduate student may register for eight semester hours during the eight-week summer session. Nine hours may be taken with permission of the Dean of the Graduate School.

The *Summer Bulletin* is issued annually and may be obtained by writing to the Director of the Summer Session. The bulletin contains information on the cost of attendance, the schedule of classes, and special features of the summer session, such as the Educational Conference, Educational Exhibit, short courses, and workshops.

Late Afternoon, Evening, and Saturday Classes

In addition to courses offered during the regular school day, late afternoon, evening, and Saturday classes are offered during the regular school year.

Selected graduate courses are offered each year in various extension centers. Not more than six semester hours of graduate extension work may be used in meeting requirements for a master's degree. Inquiries concerning extension courses should be directed to the Division of University Extension and Field Services.

Admission

Who May Apply

A student who has completed his work for a bachelor's degree, or who will do so within one semester, at a college or university that is accredited by the appropriate regional accrediting association, may apply for admission to the Graduate School. While conditional admission may be granted to a last semester senior, only those who have received a bachelor's degree will be permitted to register. Under certain conditions, however, seniors may be permitted to begin graduate work. See page 10.

Applications and Credentials

All students who wish to take work for graduate credit must submit a formal application for admission to the Graduate School. This includes students who have graduated from, or are attending this University. It applies also to those who wish to take university extension courses for graduate credit.

All applicants, except those whose previous work is entirely at this University, must have the registrar of each college or university previously attended send two transcripts of credits to the Office of Admissions and Records. Transcripts in the possession of students, or mailed by them, are not acceptable for admission.

An application fee of \$15 (check or money order) must accompany the application for admission.

A prospective student at the master's level should file his application, and arrange for official transcripts to be sent, at least three weeks before the date of registration. Filing at a later date may delay registration. Under special circumstances the Director of Admissions and Records may approve applications tentatively, pending receipt of official transcripts or action by the committee on admissions. Conditional admission will not be granted for short courses or post session.

Applicants for admission to specialist and doctoral programs are encouraged to apply as early as possible. Two months should be considered as the minimum period between filing of applications and registration.

Each student who takes more than six semester hours during a regular semester and every graduate assistant or fellow who accepts a waiver of fees, regardless of the number of semester hours for which he registers, is required to take a physical examination before entering the University. The examination must be made at the student's expense. It must be made by a physician licensed to practice medicine in the state of residence. A report of the findings of a chest x-ray or skin test for tuberculosis, done within the year, must be a part of this examination.

Application blanks for admission to the Graduate School may be obtained from and are filed with the Director, Office of Admissions and Records.

Application to the Graduate School does not guarantee candidacy for a degree, nor does the University guarantee that a degree may be earned in any set period of time.

Re-admission of Former Students

Graduate students who wish to return to the University after a lapse of one semester or more should apply for re-admission through the Office of Admissions and Records at least seven days prior to the beginning of registration for the session which they wish to attend. A student who has attended another college or university during his absence from the campus should request that institution to send a transcript of his work to the Office of Admissions and Records at this University.

Non-Degree Students

The University recognizes two types of students who are eligible to take graduate work for graduate credit. These are (a) students in degree programs and (b) non-degree students.

A student in a degree program follows a program that, if successfully completed, leads to a degree. A non-degree graduate student may take graduate courses, but he has not been approved to work toward a degree.

A non-degree student who later wishes to work toward a degree must make application for admission to a degree program in the Office of Admissions and Records. He must meet the regular entrance requirements for a degree program. In the meantime, there is no guarantee that courses taken while he is a non-degree student may be used in meeting the requirements for a degree.

Credits earned by a non-degree student are recorded and are available for transfer. But such credit may not be used in meeting the requirements for a degree at Illinois State University unless the student is regularly admitted to a degree program as noted above. If the student is admitted, he may then request that earlier work be considered in meeting requirements. In approving such a request the University will consider the quality of the work and the requirements of the curriculum in which the student is enrolled.

A non-degree student may register for courses for which he has the prerequisites, unless such registration is restricted by the Dean of the Graduate School.

Admission to Master's Programs

An applicant for a program leading to the master's degree is considered on the basis of his academic record and other criteria that may include examinations, interviews, and letters of recommendation. Tests for admission are described below.

An applicant with a superior academic record may be admitted directly to a degree program. An applicant who does not have a superior academic record may be required to give evidence of ability to succeed in graduate work by taking a special examination. An examination may also be given to indicate the student's proficiency in the use of the English language. In considering an applicant for any curriculum, there may be departmental requirements in addition to the general requirements of the University.

When an applicant is approved, the departmental adviser will indicate any courses that may be required to remove undergraduate deficiencies. The adviser also may specify certain graduate courses which will be required in addition to those listed in the catalog. The adviser will designate which, if any, of these courses may be used in meeting requirements for the degree.

A senior in good standing at this University may begin graduate work during the semester or summer session in which he completes the requirements for the bachelor's degree, if he otherwise qualifies for a degree program. During a semester he may not register for more graduate credit than the difference between fifteen hours and the number of hours required to complete the bachelor's degree. During the summer session he may not register for more graduate credit than the difference between eight hours and the number of hours required to complete the bachelor's degree. It is understood that graduate credit may be received for graduate courses only if requirements for the bache-

lor's degree are completed during the semester or summer session in which the student begins graduate work. This opportunity is also extended to last semester seniors of other universities who find it possible to take graduate work at this University while completing requirements for the bachelor's degree on their own campuses. Interested students should write to the Dean of the Graduate School for further information.

Admission to Specialist and Doctoral Programs

A student seeking admission to a specialist or doctoral degree program must present letters of recommendation, and must take qualifying examinations before being admitted to the program. He may be required to come to the campus for an interview. Tests for admission are described below.

Admission of an applicant to a specialist or doctoral program will take account of personal and professional qualifications as well as scholastic records and measurement of academic ability. Admission involves approval by the department as well as the Graduate School.

Tests Required for Admission

Master's Programs

All students seeking admission to master's degree programs must submit scores on the Aptitude Test of the Graduate Record Examination. They should also submit scores on the Advanced Test of the Graduate Record Examination if tests are available in their fields of study. Arrangements for taking the Graduate Record Examination can be made locally in the Test Service Office, 109 Moulton Hall, or by writing to Educational Testing Service at either Box 955, Princeton, New Jersey, 08540, or 1947 Center Street, Berkeley, California, 94704.

Specialist and Doctoral Programs

All students seeking admission to specialist and doctoral programs must submit scores on the Miller Analogies Test. Information concerning this examination may be obtained at testing centers, or by writing to the Psychological Corporation, 304 East 45th Street, New York, New York, 10017. Local students may take the test at ISU. An English usage test is also required. Arrangements for taking this test, either locally or at other testing centers, can be made by writing to the Graduate Office, Hovey Hall, Illinois State University.

English Examination for International Students

Illinois State University requires that students from non-English speaking countries, who seek admission to the Graduate School, must take the "Test of English as a Foreign Language." Students wishing to take this examination should write to TOEFL, Education Testing Service, Princeton, New Jersey, 08540. They will be informed as to testing centers nearest their homes and the dates on which the examination will be offered. Following completion of the examination they should ask the Educational Testing Service to send test scores to the Graduate School, Illinois State University, Normal, Illinois 61761.

Admission to Teacher Education Programs

Students who have been admitted to the Graduate School and who wish to take work leading to certification for public school positions in Illinois should send transcripts of their past work along with a check for ten dollars, to the State Teacher Certification Board, 212 East Monroe Street, Springfield, Illinois 62706, requesting an evaluation for the particular certificate in which they are interested. They should also complete an application form in the office of the Dean of the College of Education, so that they can be assigned an adviser to assist them in planning a program to meet requirements specified by the State Certification Board.

All students seeking to complete certification requirements at Illinois State University must meet university standards for teacher education programs, which include an acceptable academic record and sufficient credits in a suitable teaching field where student teaching assignments are possible. Eventual assignment to student teaching must be approved by both the head of the academic department in the field in which the student plans to teach, and the Head of the Department of Professional Laboratory Experiences.

Graduate students who already hold certification for teaching but are seeking certification on a different level, such as supervision, will be advised as to procedure in their respective departments.

Costs and Living Accommodations

The average cost for board, room, fees, and textbooks for an Illinois resident approximates \$1200 for the school year of 36 weeks. The fees below are subject to change.

Application Fee

An application fee of \$15 (check or money order) must accompany the application for admission.

Fees—Residents of Illinois*

The following fees are due on registration day. Students are not admitted to classes until fees have been paid.

Each Semester

For students who register for more than six semester hours:

**Registration fee	\$60.00
Activity fee	16.00
*Student Insurance	9.00
University Union fee	11.00
Recreational facilities fee	9.00
Athletic and service fee	10.50
	<hr/>
	\$115.50

For students who register for six semester hours or less:

Registration fee per hour	\$ 9.00
(Activity, student insurance, University Union, and recreational facilities fees are not charged)	

Eight-Week Summer Session

For students who register for more than three semester hours:	
Registration fee	\$30.00
Activity fee	6.00
Student Insurance	4.50
University Union fee	5.00
Recreational facilities fee	4.50

	\$50.00

For students who register for three semester hours or less:

Registration fee per hour	\$ 9.00
(Activity, student insurance, University Union, and recreational facilities fees are not charged)	

Post Session and Short Sessions

Registration fee per hour	\$ 9.00
(Activity, student insurance, University Union, and recreational facilities fees are not charged)	

Auditors

Fees for students who take courses as auditors, without credit:	
Registration fee per hour	\$ 9.00
Maximum charge for a semester	60.00
Maximum charge for eight week summer session	30.00

Other Fees and Expenses

Graduation fee	15.00
Must be paid before published deadline.	
Late registration fee	10.00
Charged after scheduled registration period.	
Change in program fee	5.00
Charged during late registration period.	
Transcript of record	\$ 1.00
Charged after first two copies. Transcripts are issued only when all obligations have been met.	
Locker and towel fee for students in physical education courses (\$2.00 refunded when padlock is returned)	\$ 3.00

Graduate students are required to purchase their own textbooks.

The activity fee covers school activities and publications such as athletics, music programs, lectures, dramatic events, forensic events, class dues, the school paper, the school annual, and Health Service.

* This was the charge for the second semester, 1967-68. The rate is subject to change.

**Graduate Assistants and Fellowship holders, see page 15.

The student insurance fee is for a student hospital-medical-surgical policy. This policy provides for all reasonable hospital expenses beginning with the first dollar and extending to a maximum of five hundred dollars, eighty per cent of any required surgeon's expense, and a major medical expense benefit of up to five thousand dollars for any one accident or period of sickness. Coverage for dependents may be obtained at an additional cost.

Each student may exercise an option to continue this during the summer months even though he may not be enrolled in the University.

The contract for furnishing this insurance is re-bid each year in order that this coverage may be provided at the lowest possible cost to the student.

Fees—Out-of-State Students

A student who is not a resident of Illinois pays the non-resident registration fee indicated below. All other fees are the same for non-residents.

A student under 21 years of age is considered a non-resident if his parents are not legal residents of Illinois. A student over 21 years of age is considered a non-resident if he is not a legal resident of Illinois at the time of registration. The Director of Admissions and Records is responsible for applying out-of-state fees.

Each Semester		
Non-resident registration fee, more than six		
semester hours		\$300.00
Eight-Week Summer Session		
Non-resident registration fee, six semester		
hours or less, per hour		45.00
Non-resident registration fee, more than three		
semester hours		\$150.00
Non-resident registration fee, three semester		
hours or less, per hour		45.00

Refunds

The registration and student insurance fees are refunded if a student withdraws from the University within a specified time period. University Union, activity, and recreational fees are not refunded.

Specifically, no refund of fees will be made after June 24, 1968, for the eight-week summer session, September 23, 1968, for the first semester, and February 10, 1969, for the second semester.

For all short sessions and the post session, no refund of fees will be made after the first day of the session.

Living Accommodations

Inquiries regarding housing should be addressed to the Office of University Housing.

On Campus

Current room and board rates in residence halls for men and women are \$470 per semester. The University provides all room equipment and linens. Personal towels, blankets, and bedspreads are provided by the student.

Married student housing facilities include 122 one-bedroom and 70 two-bedroom unfurnished apartments. One-bedroom units rent for \$65 per month, two-bedroom units, \$75 per month.

The University reserves the right to increase current rates if necessary at the beginning of any semester or summer term with the understanding that adequate notice will be given.

Off Campus

A rooming agreement, defining terms on which rooms are rented, is completed by all students and householders when space is reserved in University-approved off-campus homes. Lists of available houses are maintained in the Housing Office.

Rates for rooms vary from \$7.50 to \$12 per week. Meals secured in the community average \$25 per week. In some homes, cooking privileges are available.

Assistantships, Scholarships, Financial Aids, and Employment

Graduate assistantships are available in most of the departments of the University. In addition, assistantships are granted to men and women who serve as counselors in the University residence halls. In each instance, the graduate assistant is assigned responsibilities that contribute directly to his professional career.

Graduate assistants are exempt from payment of the registration fee. They are required, however, to pay all other regularly assessed fees.

The National Defense Education Act provides for a loan for graduate students not to exceed \$2,500 per academic year. This loan is based on proven financial need as determined by the Financial Aids Office through the appropriate application. The loan recipients who enter the teaching field upon their departure from the University may be eligible to cancel one-tenth of the loan amount per year of teaching, up to a maximum of 50% of the loan. Special Education teachers are allowed forgiveness of 100% of the loan at the rate of 15% per year of teaching. There is no interest on these loans as long as the student remains in school, and 3% interest following departure from school.

The Illinois State Guaranteed Loan Program, which was initiated in 1966, makes it possible for graduate students to borrow up to \$1,500 per academic year. This loan is less need, and more convenience oriented than the Federal Loan Program. There is no interest on the loan while the student remains in school, and 3% interest following departure from the University. The Office of Student Financial Aids can provide additional information and application procedures.

A limited number of tuition scholarships are available for foreign students.

The undergraduate catalog lists other scholarships and grants, some of which may be available to graduate students.

A general loan fund is available for graduate students, from which they may borrow at a low rate of interest a sum not to exceed \$150. Information concerning this fund may be obtained from the Office of Student Financial Aids.

For Veterans

Federal Benefits

Veterans or dependents of veterans who believe that they may be eligible for benefits should contact the Office of Veteran's Services, Hovey Hall, either by mail prior to registration or in person soon after their arrival on campus.

State Military Scholarships

During any semester or summer session for which a veteran is not receiving federal benefits, he may avail himself of the provisions of the State Military Scholarship Law, provided he has an honorable discharge and was a resident of the state of Illinois at the time of his induction. These scholarships, which cover four years of registration and activity fees at the state supported universities only, are administered through the Office of Admissions and Records. Work under a State Military Scholarship must be completed in a six year period and a leave of absence must be requested if a scholarship is not used in consecutive semesters.

Part-time Employment

There are possibilities for part-time work for both men and women on the campus and in the community. Information may be received from the Financial Aids Office. Before entering into agreement with an employer, the student should consult the Financial Aids Office.

Student Life and Services

University Code of Student Life

The University assumes that all of its students will accept the responsibility of maintaining high standards of personal behavior. It further assumes that persons who are unsympathetic with such standards or unwilling to maintain them will not apply for admission. The student is held responsible for meeting these standards in the interest of his own personal development, the reputation and traditions of the University, and the welfare of the teaching profession.

Any student who fails to meet these requirements may be asked to withdraw immediately from the University.

Regulations and policies governing student conduct, housing, activities, and services are in the *Code of Student Life*, a handbook for all students. Students will be held responsible for familiarity with the University Code.

Health Service

The University Health Service is maintained by and is an integral part of Illinois State University. Because good health is an essential for success as a student or teacher, the Health Service is concerned directly with promotion of good physical and mental health among university students.

The Health Service, located in Fairchild Hall, includes an infirmary. In addition to services which are educational or preventive in nature, the University physician is available for consultation during office hours regarding any health problem a student may have.

Each student who takes more than six semester hours during the semester is eligible for health service and is required to take a physical examination before entering the University. A student who takes more than 3 hours during the summer session also is eligible for health service but is not required to have a physical examination.

Psychological Counseling Service

The Psychological Counseling Service, located in Fairchild Hall, is available to University students who need help to avoid, correct, or alleviate mal-adjustments. In addition to providing counseling for students in the University, the Psychological Counseling Service provides training experiences for graduate students in the School Psychologist curriculum.

Veterans Services

The Dean of Men is Director of Veterans Services. His office advises veterans on the provisions established by the federal government. In order that the proper forms may be executed, the veteran should write to the Director of Veterans Services before he registers.

If federal government financial aid is not available to the veteran, he may use the State Military Scholarship for his University fees. The veteran must have been a resident of Illinois when he entered military service. Evidence of such service must be presented to the Office of the Registrar.

For details regarding financial aid, see the section on Assistantships, Scholarships, Financial Aids, and Employment.

Cultural Opportunities

The University Union serves as a center for student activities, social and cultural. Lectures, entertainments, and art displays by faculty, students, and off-campus persons are presented in this building.

Undergraduate organizations on the campus present many programs of aesthetic, dramatic, and musical nature. There are also student forensic and athletic events.

The Entertainment Board brings to the campus each year nationally known musicians, dancers, lecturers, and stage personalities. It also sponsors the Arts Theatre, featuring American and foreign film classics.

Civic organizations in Bloomington-Normal provide many musical and dramatic events.

Illinois Wesleyan University, located in Bloomington, presents additional cultural opportunities through its faculty, students, and off-campus personalities and groups.

Bureau of Appointments

The University maintains an active program of placement and endeavors to keep constantly informed regarding the requirements of schools, businesses and governmental agencies.

The Bureau makes an effort to follow up graduates in order to assist them to positions of responsibility commensurate with their experience and success in the field. All graduates who desire to secure professional and financial advancements should each year bring their credentials up to date in the Bureau of Appointments.

Alumni Office

Through the Alumni Office, the Alumni Association, and thirty-three ISU Clubs, former students maintain contact with one another and the University. The Alumni Office keeps records of over 17,000 alumni on file and also serves as headquarters for alumni when they are on the campus. The *News Letter*, a publication of the Publicity Office, goes to all graduates three times a year.

The *Alumni Quarterly* is published four times each year and serves as the organ of the Alumni Association. The Association plans Founders' Day, class reunions, the annual alumni luncheon at commencement, and also many homecoming activities.

The University Foundation

The Illinois State University Foundation is a tax-exempt, not-for-profit corporation, organized under the laws of the State of Illinois. The purpose of the Foundation is to solicit and receive gifts, bequests, grants, and other contributions consistent with the purpose of ISU.

Gifts received by the Foundation are used to support scholarships, fellowships, and faculty research, and to provide equipment and special purpose buildings not likely to be provided by Legislative appropriations. Because the University must use state funds primarily for additional classrooms and laboratories, and for faculty salaries, the support which the University Foundation can generate from individuals, from industry, from private organizations, from foundations, and from government agencies provides the extra help needed to ensure that Illinois State University will continue to be a creative and progressive force in higher education.

Alumni and other friends of the University who seek further information about the purpose of the Foundation, or concerning ways in which they may make contributions to the Foundation, should confer with the Executive Director of the Foundation.

Fields of Study and Degrees Granted

***College of Applied Science and Technology**

Home Economics	M.A., M.S., M.S. in Ed.
Industrial Arts	M.S., M.S. in Ed.

***College of Arts and Sciences**

Biological Sciences	M.S., M.S. in Ed., Ph.D.
Chemistry	M.S., M.S. in Ed.
Economics	M.A., M.S.
English	M.A., M.S., M.S. in Ed.
French	M.A.
Geography	M.S., M.S. in Ed.
History	M.A., M.S., M.S. in Ed.

Latin	M.A., M.S. in Ed.
Mathematics	M.A., M.S., M.S. in Ed.
Physical Sciences	M.S., M.S. in Ed.
Physics	M.S., M.S. in Ed.
Political Science	M.A., M.S.
Psychology	M.A., M.S.
School Psychology	M.A., M.S., M.S. in Ed.
Social Sciences	M.A., M.S., M.S. in Ed.
Sociology	M.A., M.S.
Spanish	M.A., M.S. in Ed.
Speech	M.A., M.S., M.S. in Ed.
Western European Studies	M.A.
College of Education	
Educational Administration	M.A., M.S., M.S. in Ed., Spec. in Ed., Ed.D., Ph.D.
Elementary Education	M.A., M.S., M.S. in Ed.
Guidance	M.A., M.S., M.S. in Ed.
Reading	M.S. in Ed.
Special Education	M.A., M.S., M.S. in Ed.
Supervision	M.A., M.S., M.S. in Ed.
*Unaffiliated Departments	
Art	M.A., M.S., M.S. in Ed., Ed.D.
Business and Business Education	M.S., M.S. in Ed.
Health and Physical Education	M.A., M.S., M.S. in Ed.
Music	M.S., M.S. in Ed.

* Students may complete programs for secondary or college teaching in these colleges, in addition to "straight" master's programs. See page 20.

Master's Degrees

Credit Requirements

Master's degrees are offered in the fields indicated above. The minimum credit requirement for the degree is 32 semester hours. A student may elect one of two alternate plans for the degree. He may elect to do a thesis for which he may receive from four to six hours of credit in Independent Research 499, or he may elect to do 32 hours of coursework and write a comprehensive examination. He may not present credits in Independent Research 499 toward the degree unless his thesis is completed and approved for deposit in the University Library.

In the arts and science master's programs, including those for college and secondary teaching, a student must present, exclusive of Independent Research 499, at least 12 of the 32 hours in courses numbered at the 400 level, eight

hours of which must be in his major field. A total of at least 16 semester hours of work must be in the major field (counting courses at the "300" and "400" levels). Remaining credits may be in such related fields as the student's adviser recommends, with the exception that in the teaching programs certain courses in education and psychology are specified.

A student should check carefully with his adviser the departmental requirements for master's degrees, since the above regulations indicate only minimums set by the Graduate School.

Special Degree Requirements

The Master of Science degree is usually awarded, except in the foreign languages, where the Master of Arts is awarded.

To qualify for the degree of Master of Arts, a student must have completed the stated requirements for a master's degree. He must have earned credit for a minimum of two years of a foreign language at the college level, or must demonstrate a reading knowledge of a foreign language. In some departments this must be French or German (see departmental regulations). He also must have earned a minimum of 32 semester hours of credit in the humanities and social sciences, in addition to work in foreign language. These requirements in foreign language, humanities, and social sciences, may be met by satisfactory work at either the graduate or undergraduate level.

To qualify for the degree of Master of Science in Education, a student must have met the academic requirements for an Illinois teaching certificate, and must have earned a minimum of 24 semester hours of credit in education and psychology counting work taken at both the graduate and undergraduate levels, including a minimum of 8 semester hours of student teaching.

College Teaching Program Requirements

This program is designed for students desiring an internship experience and a basic seminar concerning the nature of college teaching. Students should register for Internship-Seminar in College Teaching 491, a course offered jointly by the Department of Education and the major department, and for Education 474, Seminar in College Teaching.

Students planning to teach in junior colleges requiring certification may need to take work beyond the 32 hours required for the degree. They should obtain information as to the certification rules of the state in which they desire to teach, in order to include the necessary courses in their programs. The University offers several courses concerned with the junior or community college.

Secondary Teaching Program Requirements

The master's program for secondary teachers assumes that the student will have completed undergraduate work for certification. Students needing to meet certification requirements should plan to take such additional courses in education-psychology as will satisfy certification requirements in the states in which they desire to teach.

A student in the master's degree program for secondary teaching must take Education 475, Introduction to Research, or an approved alternate course

offered by his own department. In addition he must select six hours from the following courses:

- Measurement and Evaluation in Education 387 (3)
- Curriculum Theory 476 (3)
- A graduate course in historical, social, or philosophical foundations of education
- Introduction to Guidance 360 (2)
- Independent Study in Education 331 (1-3)
- Advanced Educational Psychology 437 (3)

The remainder of the coursework is taken in the student's major department. Students should note requirements listed with departmental offerings in this catalog and should consult advisers concerning their programs.

Residence Requirements

A candidate for a master's degree must spend at least one full term in residence in order to qualify for the degree. A full term may be interpreted as one semester, with a class load of 8-15 hours, or a summer session with a class load of from 6-8 hours.

Time Limits

All graduate credit used in meeting requirements for the degree must be earned within a period of six years.

Transfer and Extension Credit

On approval of the Dean of the Graduate School, a student holding a bachelor's degree from this University may present a maximum of eight semester hours of graduate credit from another college or university for use in meeting the requirements of the master's degree. A student who holds a bachelor's degree from another college or university may present a maximum of six semester hours of graduate credit earned at another college or university. A student who plans to take courses elsewhere is advised to have such work approved in advance to make sure that the courses are appropriate for his curriculum at Illinois State University.

Not more than six semester hours of graduate extension work may be applied toward the master's degree. Correspondence courses are not accepted toward a master's degree. Forms for requesting transfer of credit may be obtained in the Graduate Office, Hovey Hall.

Academic Advisers

Each student has an academic adviser to assist him in planning his work. This adviser should be consulted regarding the sequence of courses, the selection of electives, and the option of thesis or comprehensive written examination.

If a student follows a curriculum of specialization in a subject-matter field, the head of the department concerned is his academic adviser unless another faculty member has been appointed by the head of the department. This plan applies to all secondary and college teaching curricula, also elementary education with departmental specialization. In other curricula, other academic advisers have been appointed.

An advisory committee is appointed for each student who writes a thesis. This committee is responsible for directing the thesis project, recommending the

student for admission to candidacy for the degree, and conducting the final examination.

If a student chooses the option of a comprehensive written examination, his academic adviser has the responsibility of recommending him for admission to candidacy and conducting the final examination.

Program Approval Required

At registration, each student's program should carry the approval of his academic adviser. If a program does not have such approval there is no assurance that the courses can be used in meeting the requirements for the degree.

Admission to Candidacy

To be admitted to candidacy for the master's degree the student must file a Plan of Study with the Dean of the Graduate School. This is done on forms obtained in his departmental office. At the time of filing, all deficiencies must be removed and the candidate must meet the requirements of the University regarding scholarship (page 30). Normally the student applies for admission to candidacy when he has completed approximately half of his work toward the master's degree. He must do so before the beginning of the semester or summer session in which he expects to receive his degree. The Plan of Study must indicate whether the student has selected the comprehensive examination or the thesis option. If the student is offering a thesis as part of his work for the degree, his thesis proposal (see below) must have been approved by the Dean of the Graduate School.

Thesis

A student electing the thesis option must register for from four to six hours of 499, Independent Research for the Master's Thesis as approved by his adviser. To register for 499 he must have filed an approved Research Proposal. No grade will be given for the course but credit will be entered on the student's record at the time his approved thesis is deposited in the University library. No credit for 499 may be offered for the master's degree by a student who does not complete a thesis.

A thesis is written under the direction of an advisory committee. The chairman of the advisory committee must be a member of the department representing the student's major field. This chairman is appointed by the head of the department or the academic adviser. The second member of the advisory committee is appointed by the department head, following a joint recommendation by the student and the chairman of the advisory committee. A student must be admitted to a degree program in the Graduate School before a thesis committee can be appointed.

The title, scope, and design of each proposed thesis must be approved by the Dean of the Graduate School. This approval must be received before a student may apply for admission to candidacy. In order to allow time for review, the student is required to file his **Proposal for Research** with the Dean of the Graduate School early in the semester preceding the one in which he

expects to receive the master's degree. Forms for submitting the proposals are available in the Graduate Office.

There is no assumption of uniformity in thesis research. For example, a student may propose a creative project in art or music. In each instance, however, the completed project must meet approved standards of scholarship in the chosen field of study. In each instance there must be evidence of ability to think logically, to gather and organize material, to draw and defend conclusions, and to present the results of the foregoing procedures in a creditable manner.

Thesis Consultant

A thesis consultant approves all theses for the Graduate School before they are officially accepted. The student is urged to consult the thesis consultant of the Graduate School as soon as he has completed a preliminary draft of the first part of his thesis and has received approval of this draft by his thesis committee. At this time the thesis consultant will counsel the student regarding problems such as those related to format, footnotes, illustrations, and the use of language.

Before a thesis is deposited in the Library, it is the responsibility of the thesis consultant of the Graduate School to examine the materials and to make sure that the report is neatly and correctly typed; is free of technical errors in format, footnoting, and bibliography; is suitable for binding; and reflects credit upon the University and its graduate program. If the form of the thesis is not thus approved, the student must make whatever corrections are necessary and submit the materials again.

A descriptive note or annotation of not more than thirty words and an abstract of not more than three hundred words must be approved by the advisory committee and must accompany the thesis when it is filed in the Library.

After approval by his committee members and the theses consultant for the Graduate School, the student must file two unbound examination (carbon) copies of his thesis in his departmental office, and a third copy in the Graduate Office one week (seven days) before he takes his oral examination. It is the student's responsibility to retrieve these examination copies shortly before his oral examination. His adviser has the responsibility of notifying members of the department and the Graduate School office that the copies have been made available for examination and he will also notify them of the time and place of the oral examination.

Following the examination the student must file the original copy and the second copy of the approved thesis, with any corrections suggested by his orals committee, unbound, in the University library. To be eligible for graduation a student must deposit his thesis in the library before 5:00 p.m. on the third day preceding graduation.

A thesis manual may be obtained in the office of the Dean of the Graduate School, Hovey Hall.

Examinations

An examination, oral, written, or both, must be taken by each student before he receives the master's degree. This examination covers the graduate

work which the student is presenting for his degree. The time, place, and nature of the examination are determined by the student's advisory committee if he selects the thesis option. The comprehensive written examination is the joint responsibility of the department and the Graduate School.

Specialist in Education

Program Requirements

Admission

A student seeking admission to a program leading to the Specialist in Education degree must present letters of recommendation and must take qualifying examinations before being admitted to the program. He may be required to come to the campus for an interview.

Admission of an applicant to a specialist degree program will take account of personal and professional qualifications as well as scholastic records and measurement of academic ability. Admission involves approval by the department as well as the Graduate School.

While the specialist program is a complete program and is usually terminal, a person completing a specialist degree is not precluded from entering a doctoral program. He should not expect to be able to transfer all his specialist course work to a doctoral program, however, since some work appropriate to the one degree will probably not be appropriate to the other. Similarly a doctoral candidate may not expect to abandon his program and accept a specialist degree as compensation for a partially fulfilled program.

Academic Advisers

The head of the department, with the approval of the Dean of the Graduate school, appoints an academic adviser for each student admitted to a specialist degree program. If the student is pursuing a minor field of study, as well as a major field, the adviser, in approving the student's program, should obtain the advice of the department representing the student's minor field. At the time of each registration, the academic adviser files copies of the student's program with the heads of departments concerned and with the Dean of the Graduate School.

Curriculum

A student selecting the specialist degree must select a major field of study, and a supporting program approved by his academic adviser, the Dean of the Graduate School, and the Department directly involved.

Transfer and Residence

A student seeking the specialist degree may petition to transfer, from another institution, not to exceed six semester hours of graduate credit beyond the master's degree. The Dean of the Graduate School must approve all transfer credit used in meeting the requirements for the specialist degree.

A student seeking the specialist degree must, after receiving a master's degree, complete at this University the equivalent of at least one academic year of graduate work. This must include one semester in which he is in residence;

or one summer in which he is in residence for eleven consecutive weeks. A student is considered to be in residence when he devotes a major part of his time to graduate study and research on the campus.

A student will not be considered in residence while he is employed full-time.

Extension courses may not be used in meeting requirements for the specialist degree.

Time Limitations

The specialist degree is not granted on the basis of a student having successfully completed a certain number of courses, but upon evidence of his scholarly attainment as demonstrated especially by examinations and competence in research.

Although course credit is not the primary basis for granting the specialist degree, a student is not eligible to take his final examination until the latter part of the session in which he is completing thirty semester hours of work beyond the master's degree. More than two semesters may be necessary to complete all requirements for the degree.

All work for the specialist degree must be completed within six calendar years after the student begins work beyond the master's level. If the student does not complete his work within this time, he may be required to take additional examinations, or additional course work, or both, in order to continue in the specialist program.

Admission to Candidacy

A student seeking the specialist degree may be admitted to candidacy after: (a) removal of any deficiencies assessed at admission, (b) approval of his proposal for research, and (c) approval by his academic adviser of a plan of study leading to the specialist degree.

Research

A student seeking the specialist degree is required to complete a research project that gives evidence of his scholarly attainment and capacity for independent investigation appropriate to the degree.

The Dean of the Graduate School appoints the student's research committee, which includes his academic adviser. The topic and research design must be approved by the Dean of the Graduate School and the department representing the student's major field. The entire committee shares the responsibility for the research project although the academic adviser may work more directly with the student.

Final Examination

The Dean of the Graduate School appoints a committee which is responsible for the final examination. This examination may be oral, written, or both. The committee includes the student's academic adviser, as well as other members of the graduate faculty.

Doctor of Philosophy and Doctor of Education

Program Requirements

Admission

A student seeking admission to a doctoral degree program must present letters of recommendation, and must take qualifying examinations before being admitted to the program. He may be required to come to the campus for an interview.

Admission of an applicant to a doctoral program will take account of personal and professional qualifications as well as scholastic records and measurement of academic ability. Admission involves approval by the department as well as the Graduate School.

Academic Adviser

The head of the department, with the approval of the Dean of the Graduate School, appoints an academic adviser for each student admitted to a doctoral program. The adviser is responsible for approving the student's program of courses with the advice of departments representing, when applicable, both major and minor fields. Normally this function is assumed by the chairman of the student's dissertation committee after that committee has been named. At the time of each registration, the academic adviser files copies of the student's program with the heads of departments concerned and with the Dean of the Graduate School.

Required Courses and Fields

A doctoral student must select both a major and a minor field (or fields) of study. The selection of minor field (or fields) must have the approval of the Dean of the Graduate School and the department directly involved. A minor field may, under certain circumstances, be in the same department as a major field.

Residence

A doctoral student, after completing work for a master's degree or its equivalent, must complete at least four semesters of resident graduate work, including at least two consecutive semesters in full time residence at this University. Work in summer sessions may not be used in meeting this requirement of two consecutive semesters. A student is considered to be in full time residence when he devotes a major portion of his time to graduate study and research on the campus.

A student will not be considered in residence while he is employed full-time.

Extension courses may not be used in meeting requirements for the doctor's degree.

Time Limitations

The doctor's degree is not granted on the basis of a student having successfully completed a certain number of courses, but upon evidence of his scholarly attainment as demonstrated especially by examinations and competence in research.

All work for the doctorate, including the dissertation, must be completed within eight calendar years after the student begins work beyond the master's level. If the student does not complete his work during this time, he may be required to take additional qualifying examinations, or additional course work, or both, in order to continue in the doctoral program.

Foreign Language and Other Requirements

The general requirement for the Ph.D. degree is a reading knowledge of two foreign languages chosen from French, German, Russian, or other approved language in which there is a body of material relevant to the student's field. The student's choice of languages must be approved by his academic adviser and the Dean of the Graduate School.

By petition, the Ph.D. student may substitute a more advanced knowledge of one language for a dictionary reading knowledge of two. In each instance the Department of Foreign Languages has the responsibility of certifying that the language requirement has been met. A reading examination in a foreign language for an advanced degree will be given from an article or book in the candidate's field. The candidate may use a dictionary. Language examinations are given on the first Fridays in October and March and the second Friday in July.

Doctoral candidates, and especially the Ed. D. candidates who are not required to offer foreign languages as research tools, are expected to have developed other competencies appropriate for doctoral candidates in their fields. These may involve proficiencies in such areas as statistics, measurement and evaluation, research techniques, and experience in field survey work or special course work.

As is the case with ability to use a foreign language, some research skills may be the product of undergraduate and early graduate work. The concern of the Graduate School is that the doctoral candidate be able to understand the research work of leading scholars in his field, that he master the processes which will enable him to do productive research himself, and that he be able to report his research findings clearly to others.

Preliminary Examination and Admission to Candidacy

A doctoral student may be admitted to candidacy after: (a) meeting the foreign language requirement or alternate approved program, (b) passing a comprehensive preliminary examination, and (c) receiving approval of the dissertation topic.

The comprehensive preliminary examination is written or written and oral. It covers both major and minor fields. It also is concerned with the student's professional competence and his ability to undertake independent research.

The Dean of the Graduate School appoints the examining committee which includes the student's academic adviser and a representative of his minor field (or fields).

Dissertation for the Ph.D. and Ed.D.

The doctoral candidate is encouraged to select a dissertation topic early in his work and to plan his course work with the advice of his dissertation

committee. The Dean of the Graduate School appoints a dissertation committee of not less than three members, the chairman of which acts as the student's academic adviser. The topic of the dissertation must be approved by the Dean of the Graduate School as well as this committee. The entire committee shares responsibility for the dissertation although the chairman may work more directly with the student.

The dissertation for the Ph.D. must involve independent research and an original contribution to knowledge. While the dissertation for the Ed.D. may meet the above requirements it is customary to allow greater flexibility in the Ed. D. dissertation, so that it may, for instance, involve the application of existing knowledge or theory to a practical educational problem or situation.

The dissertation must be approved by the dissertation committee, as well as the final examination committee appointed by the Dean of the Graduate School. This committee represents the University at large.

The student is not required to have the dissertation printed. He will be required to pay the expense of microfilming for distribution by University Microfilms. The University may publish part or all of the dissertation.

Registration for Dissertation Work

A candidate for the doctorate who has completed coursework must register for Research 490 or a similar course recommended by his department during the semester or summer session in which he takes his final oral examination and in any semester or summer session in which he holds an assistantship or fellowship, or in which he wishes to use University facilities.

Final Examination

The Dean of the Graduate School appoints a committee which is responsible for the final examination. This examination may be oral, written, or both, and is concerned with more than the dissertation topic. The committee includes the student's academic adviser, as well as other members of the graduate faculty.

Academic Procedures and Regulations

The Grading System

Grades

The grades with their value in grade points are as follows:

A	(Passing)	4 grade points per semester hour
B	(Passing)	3 grade points per semester hour
C	(Passing)	2 grade points per semester hour
D	(Passing)	1 grade point per semester hour
F, WF	(Failing)	No grade points per semester hour
I	(Incomplete)	No grade points per semester hour
WX, WP	(Withdrawal)	No grade points per semester hour

A, B, C, or D will be recorded for work which has been given a passing grade.

F will be given to (1) Students who withdraw from a course at any time without official permission; (2) Students who are in a course all semester but who fail to make a passing mark.

Withdrawals

WX, WP, or WF will be given to students who have received official permission to withdraw from a course. WX is given if the student withdraws before the quality of the work can be determined; WP, if the student is passing at the time of withdrawal; and WF, if failing. Official permission to withdraw from a course will not be given after the fourteenth week of a semester or the sixth week of a summer session. Final dates for withdrawal for the 1968-1969 school year are December 13, 1968, for the first semester; May 9, 1969, for the second semester; and July 25 for the 1969 summer session. In a case involving prolonged illness, a student may be permitted to withdraw at a later date if such withdrawal is recommended as a health measure by the University Health Service.

For withdrawals from courses students should report to the Registration Office, 110 Moulton Hall. After the period during which program changes are made, a student must have a conference with the instructor of any course from which he is planning to withdraw. This conference must be held prior to the granting of official permission to withdraw from a course. All students who wish to withdraw from the University should first report to the office of the Dean of Students. In case of accident or illness which would make withdrawal in the regular way impossible, a letter sent to the Graduate Dean explaining the situation will be sufficient, providing that library card and any borrowed volumes are returned.

If a student withdraws from a class or from the University during the semester without arranging officially with the Registration Office his withdrawal will be considered unofficial after three weeks of absence or by the close of the semester (whichever is the shorter period of time), unless justifiable reason for extension of time is accepted by the Dean of the Graduate School.

Incompletes and Deferred Grades

An I (incomplete) will be given a student who is doing passing work but who, because of illness or other justifiable reasons, finds it impossible to complete the work by the end of the semester or session. The student must be in class to within three weeks of the close of the semester or one week of the summer session, and the quality of his work must be such that he can complete it through special assignments and examinations. Incompletes should be cleared during the next semester or session a student is in school and must be cleared before one year has elapsed. A deferred grade (de) is usually given in research courses leading to a thesis or dissertation if the work is not completed by the end of the semester or session.

Academic Load

Twelve hours is the usual load for a graduate student during the semester. The maximum academic load for graduate students is fifteen semester hours.

In the eight-week summer session, the maximum load is eight semester hours.

A fully employed person may not enroll for more than one course, nor for a total of more than four hours, during any semester.

If a student holds an assistantship, his academic class load is adjusted accordingly.

Scholarship and Other Requirements

A student must have at least a B average at this University in order to be admitted to candidacy for a degree. For graduation a B average is also required. The Dean, in consultation with the student's adviser, may ask a student whose work is unsatisfactory to discontinue graduate work or grant him a probationary period in which to bring his work up to required standards. A student who fails to bring his total record up to a B average during the probationary period will not be permitted to register for further graduate work.

Transfer credit must carry a grade of B or better if it is to be used in meeting requirements for a degree. Courses completed at this University with grades below C may not count toward a degree, but these grades are counted in computing the average. If a graduate student repeats a course, both grades are counted in computing the grade-point average.

All grades of I (incomplete) must be removed six weeks before the June commencement and two weeks before the August commencement on courses that are to count toward graduation.

The last course or courses before graduation must be completed with this University.

It is the student's responsibility to make a formal request for the transfer of any credit which he proposes to use in meeting requirements at this University.

The Council may deny admission to the University, or registration at any time, or admission to candidacy for the degree, upon the basis of unsatisfactory scholarship, or what in their judgment is unfitness for teaching on physical, moral, mental, or emotional grounds.

Auditor

A student may register as auditor, attending class without participation and without credit. Registration must have the approval of the instructor. Registration as an auditor is performed separately through the Office of the Registrar. The auditor fee is indicated in the section on cost. Students who are registered for seven or more hours for credit may audit courses free of charge.

Graduation

A student must apply for graduation in the Office of Admissions and Records, Hovey Hall, before the deadlines specified for each session in the calendar on page 3. At the time application is made, the graduation fee of \$15 must be paid.

Commencement

Degrees are conferred after the close of each semester, after the end of the summer session, and at the close of the post-session. Commencement is held only twice each year, in June and in August. Presence at commencement is required for students who graduate at these times, unless the student receives permission from the Dean of the Graduate School to receive his diploma by mail. Since no commencement is held at the end of either the post-session or the fall semester, diplomas are mailed to students who complete their work in these sessions.

Departments and Course Offerings

SEMESTER PLAN

The University operates on the semester plan. The value of courses, is therefore, in terms of semester hours. A semester hour is assigned for a fifty-minute period of lecture or discussion for a semester of 18 weeks. For laboratory two fifty-minute periods are necessary for a semester hour.

COURSE NUMBERING SYSTEM

This Graduate Catalog contains courses numbered 300 to 499.

300-399 Advanced undergraduate and graduate courses. Open to juniors, seniors, and graduate students.

400-499 Graduate courses.

TEACHING STAFF

The members of the teaching staff of each department are listed in the departmental sections which follow. The entire faculty for the Graduate School is shown in a section after **Departments and Course Offerings**.

ACCOUNTING

(See Business)

ANTHROPOLOGY

(See Sociology-Anthropology)

ART

TEACHING STAFF

Head of the Department: F. Louis Hoover. Office: Centennial Building, West 203.

Professors: F. Louis Hoover, Ruth M. Freyberger

Associate Professors: George Barford, Virginia H. Vint

Assistant Professors: Harold Boyd, W. Douglas Hartley, Edwin E. Niemi, C. Louis Steinburg, James L. Wozniak

The department offers work leading to the following degrees: M.A., M.S., M.S. in Ed., and Ed.D. University requirements for master's degrees are described on pages 19-23. Those for the doctorate are described on pages 26-28.

The master's program offers advanced work in the teaching of art; the history, philosophy and psychology of art; and studio practice. The studio areas include ceramics, jewelry, painting, printmaking, sculpture, and weaving.

The doctoral program has as its major purpose the preparation of college and university teachers of art and art education, and the preparation of supervisors and directors of art in public schools.

The department reserves the right to keep examples of original work produced by graduate students for its permanent collection of student art work.

COURSES

321 Philosophy of Art Education 3 sem. hrs.

The role of art in society and the historic development of art education in public schools. Emphasis upon the development of a personal philosophy of the role of art in the democratic society.

324 *Advanced Jewelry and Silversmithing* 2-6 sem. hrs.
Special problems in jewelry and silversmithing. May be repeated. Prerequisite: Art 224.

327 *Advanced Ceramics* 2-6 sem. hrs.
Special problems in ceramics. May be repeated. Prerequisite: Art 227.

331 *Advanced Drawing* 1-3 sem. hrs.
Special problems in drawing. May be repeated. Prerequisite: Art 114.

332 *Advanced Sculpture* 2-6 sem. hrs.
Special problems in sculpture. May be repeated. Prerequisite: Art 232.

340 *Advanced Weaving* 2-6 sem. hrs.
Special problems in weaving. May be repeated. Prerequisite: Art 240.

345 *Advanced Graphics* 2-6 sem. hrs.
Special problems in graphic arts. May be repeated. Prerequisite: Art 245.

351 *Special Projects in Art* 2-6 sem. hrs.
Special projects in art or art education chosen by the student for special investigation with the approval of the instructor. A student may enroll in this course for credit more than once if the material covered is not duplicated.

361 *Advanced Painting* 2-6 sem. hrs.
Special problems in painting. May be repeated. Prerequisite: Art 262.

370 *Contemporary Art* 2 sem. hrs.
Development of modern movements in painting, sculpture, architecture, and industrial design in Europe and America.

375 *Renaissance Art* 3 sem. hrs.
General influence determining the art product in Italy, Germany, Holland, England, and Flanders; related arts. Sources and readings for research. Chronological survey of artistic evidence in architecture, sculpture, painting, and the minor arts.

381 *Art in the United States* 3 sem. hrs.
A survey of the development of painting, sculpture, industrial design, and architecture in the United States with an emphasis upon twentieth-century trends.

401 *Current Practices in Art Education* 2 sem. hrs.
Development of a philosophy of art education. Basic readings in the field of art education, including city and state courses of study. Not open to art majors.

402 *Studies in Art Education* 2 sem. hrs.
Problems in art education from the point of view of research and experimentation. Development of instructional methods and materials, and means of testing their validity.

403 *Organization of Public School Art Programs* 2 sem. hrs.
Problems relating to the development and administration of total public school art programs in communities of different sizes.

411 *Art in Elementary Schools* 3 sem. hrs.
Art program from kindergarten through the sixth grade: content, methods, and teaching materials. The role of art in the total curriculum.

412 *Art in Secondary Schools* 3 sem. hrs.

The art program at the junior, senior high, and junior college levels: content, methods, and teaching materials. The role of art in the total curriculum.

421 *Problems in Teaching College Art* 2-5 sem. hrs.

Opportunity for observation, participation, and teaching at the college level. Assignments are made with the approval of the department head at least two months prior to registration.

422 *College Programs in Art* 2 sem. hrs.

Planning and administration of college and university art programs.

425 *Psychology of Art* 3 sem. hrs.

A survey of philosophical and psychological studies of the creative individual; art appreciation and production, and the art product; consideration of social and educational implications.

444 *Problems in Studio Work* 2-6 sem. hrs.

Individual study and direction in creative activity. May be repeated.

451 *Special Projects in Art* 2-6 sem. hrs.

Special project in art or art education chosen by the student for investigation with the approval of the instructor and the head of the department. A student may enroll in this course for credit more than once if the material covered is not duplicated.

471 *Primitive Art* 3 sem. hrs.

Art of preliterate cultures in several parts of the world and the culture traits, complexes, and institutions associated with them.

482 *Contemporary Painting* 3 sem. hrs.

Backgrounds for twentieth-century painting. Major movements in modern painting: Impressionism, Post-Impressionism, Dada, Surrealism, social consciousness, Regionalism, Abstract Expressionism. Painting Today.

483 *Contemporary Architecture* 3 sem. hrs.

Backgrounds for twentieth-century architecture. New materials and techniques. The European group. Oud, Le Corbusier, Gropius, and van der Rohe. The Americans: Richardson, Sullivan, and Wright. The International Style. The American home today.

490 *Research in Art* Variable credit

Research involving the gathering of data to form the basis for the doctoral dissertation. Approval of the head of the department is required.

491 *Internship-Seminar in College Teaching in Art* 3 sem. hrs.

Credit for the course is given in Education (see Education 491).

497 *Research Seminar* 1-6 sem. hrs.

Introduction to bibliography, methods of scholarly research and the critical evaluation of research in the field. May be repeated by more advanced students who desire direction and constructive criticism as they pursue research problems.

499 *Independent Research for the Master's Thesis* 1-6 sem. hrs.

A student electing the thesis option must take from four to six hours of 499. A proposal for research must be on file before registration for this course is approved by the student's adviser. While registration beyond six hours may be permitted for the convenience of the student, he may not count more than a total of six hours of 499 among the 32 required for the master's degree.

BIOLOGICAL SCIENCES

TEACHING STAFF

Head of the Department: R. Omar Rilet. *Office:* Science Building 206.

Professors: Herman E. Brockman, Walter H. Brown, Elearnor Dilks, Dorothy Fensholt, Howard R. Hetzel, Anthony E. Liberta, J. Louis Martens, Loren W. Mentzer, Edward L. Mockford, E. Ione Rhymer, R. Omar Rillet, Robert D. Weigel, Edwin R. Willis

Associate Professors: Dale E. Birkenholz, Robert M. Chasson, Kenneth L. Fitch, John L. Frehn, Clarence W. Hardiman, Howard N. Harrison, Orrin J. Mizer, Matthew J. Nadakavukaren, David D. Pittman, Jim N. Tone

Assistant Professors: Lauren E. Brown, Tsan-Iang Chuang, John C. Cralley, Harry W. Huizinga, D. Reed Jensen, Mohammed M. Sayeed, Jack A. Ward

Research Associate: William C. Starrett*

The department offers work leading to the following degrees: M.S., M.S. in Ed., and Ph.D. Master's degree students are required to take the following courses: 300 and 301—Readings in the Biological Sciences and 304—Seminar in Biology. University requirements for the M.S. and Ph. D. degrees are described elsewhere in this catalog.

A student working toward the Ph.D. degree in Biology may concentrate his studies in the following areas: botany, genetics, microbiology, physiology, or zoology.

COURSES

300 and 301 *Readings in the Biological Sciences* Each 1 sem. hr.
Readings of classical and modern biological literature.

302 *History of Biology* 3 sem. hrs.

A study of the great biologists emphasizing their contributions to the development of the biological sciences. Lecture.

303 *Natural Science for Elementary Teachers* 3 sem. hrs.

Present-day developments in science in relation to instruction in elementary schools. Content, activities, and approach involved in teaching an integrated science program at various grade levels. Lecture and laboratory.

304 *Seminar in Biology* 1 sem. hr.

Staff members, guest speakers and graduate students will discuss their current research at these seminars. All seniors and graduate students in the department are expected to participate each semester, but credit is given once only.

305 *Special Problems in Biology* 1-3 sem. hrs.

Special work in fields represented by the research interests of the staff. Assignments depend upon the student's interest and background. Projects must be approved by the staff member and the head of the department.

306 *Regional and Area Studies* 1-9 sem. hrs.

An intensive study of particular lands, environments, cultures, and peoples. May be given in cooperation with other departments, on or off the campus. The areas to be studied, participating departments, and credit hours available in the several departments will be announced each time the course is offered.

* Illinois Natural History Survey

318 *Laboratory Techniques* 2 sem. hrs.

Preparation of permanent microscope slides of plant and animal tissues and special techniques for whole mounts, plastic embedding, plastic injections, and nerve preparations. Lecture and Laboratory.

319 *Genetics* 4 sem. hrs.

Data and concepts of genetics from Mendel to today. Lecture and Laboratory. Prerequisite: Twelve semester hours of laboratory courses in biological sciences, or consent of instructor.

320 *Plant Pathology* 4 sem. hrs.

Systematics, morphology, life-cycles, and control measures for organisms causing plant diseases. Lecture and laboratory.

331 *Taxonomy of Vascular Plants* 4 sem. hrs.

Plant classification with emphasis on native and naturalized species. Lecture and laboratory.

332 *Taxonomy of Non-Vascular Plants* 4 sem. hrs.

Plant classification with emphasis on the evolution of the algae, fungi, and bryophytes. Lecture and laboratory. Prerequisite: Biological Sciences 122.

333 *Comparative Plant Morphology* 4 sem. hrs.

Comparative morphology of vascular plants emphasizing morphogenesis. Lecture and laboratory. Prerequisite: Biological Sciences 123.

334 *Introductory Mycology* 3 sem. hrs.

Morphology, taxonomy, and evolution of the fungi. Lecture and laboratory.

340 *Administration of School Health* 3 sem. hrs.

Administration and organization of school health programs and health education programs. Lecture.

342 *Introduction to Biochemistry* 4 sem. hrs.

See Chemistry 342.

360 *Sanitation* 4 sem. hrs.

Microbiology as applied to community water supplies, waste disposal, swimming pools, foods and their distribution, and stream and air pollution. Lecture and laboratory. Prerequisite: Biological Sciences 260.

365 *Phycology* 4 sem. hrs.

Taxonomy, morphology, anatomy, and physiology of the algae with special emphasis on species common to Illinois. Lecture and laboratory. Prerequisite: Biological Sciences 122.

381 *Applied Human Anatomy* 4 sem. hrs.

Study of the human body with emphasis on the musculo-skeletal and nervous systems. Designed for students who will teach physically handicapped children. Lecture and laboratory. Prerequisites: Biological Sciences 182 or Health and Physical Education 182.

382 *The Eye—A Laboratory and Clinical Study* 2 sem. hrs.

Anatomy and physiology of the eye. Lecture and laboratory supplemented by clinical demonstrations on the detection and care of eye disorders. Prerequisite: Biological Sciences 182.

383 *Parasitology* 4 sem. hrs.

Morphology, life histories, and host-parasite relationships of arthropod, helminth, and protozoan parasites. Lecture and laboratory.

385 *Physical Defects—Survey and Rehabilitation* 3 sem. hrs.

Physical defects of handicapped children and procedures used in rehabilitation. For those preparing to teach special classes of physically-handicapped children. Lecture and laboratory. Also offered as Health and Physical Education 385. Prerequisite: Biological Sciences 381.

391 *Entomology* 4 sem. hrs.

Anatomy, physiology, and embryology of insects. Lecture and laboratory.

392 *Embryology* 4 sem. hrs.

Comparative embryology of the vertebrates with emphasis on avian and mammalian embryos. Lecture and laboratory. Prerequisite: Biological Sciences 192.

394 *Protozoology* 4 sem. hrs.

Survey of the Phylum Protozoa, emphasizing morphology, physiology, reproduction, and taxonomy. Lecture and laboratory.

395 *Biology of the Lower Vertebrates* 4 sem. hrs.

The biology of fish, amphibians, and reptiles. Lecture and laboratory.

396 *Biology of the Higher Vertebrates* 4 sem. hrs.

The biology of birds and mammals. Lecture and laboratory.

401 *General Ecology* 4 sem. hrs.

Influence of environmental factors upon plant and animal associations. Analysis of representative communities. Field and laboratory research techniques. Lectures, laboratory, and field trips.

402 *Aquatic Biology* 4 sem. hrs.

Ecological study of streams, ponds, and lakes, and the interrelationships of the plants and animals in these habitats. Field trips to varied aquatic habitats and aquatic field stations in the area are included. Lecture and laboratory.

404 *Seminar in the Teaching of Biology* 1 sem. hr.

Techniques and aids for biology teaching in secondary schools and junior colleges. Students will be required to participate in the activities of the seminar by giving reports, preparing demonstration materials, or illustrating special teaching materials.

416 *Cellular Physiology* 5 sem. hrs.

A study of fine structure and physiochemical properties of the cell. Topics considered include: ultrastructure and functions of cell organelles, thermodynamic principles pertaining to metabolism, enzyme properties, and active transport. Lecture and laboratory. Prerequisite: consent of instructor.

417 *Cytology and Cytogenetics* 4 sem. hrs.

The structure, behavior, and evolution of cells and chromosomes. Lecture and laboratory. Prerequisite: Biological Sciences 319 or consent of instructor.

418 *Electron Microscopy* 4 sem. hrs.

Preparation, staining, embedding and sectioning procedures, negative staining and vacuum evaporation techniques, preparation of specimen support membranes, photographic methods, use of the electron microscope and introduction to electron optics. Lecture and laboratory. Prerequisite: consent of instructor.

419 *Advanced Genetics* 4 sem. hrs.

Recent developments in genetics including topics of genetic recombination, gene structure and function, mutation, and gene regulation. Lecture. Prerequisite: Biological Sciences 319 or consent of instructor.

420 *Seminar in Genetics* 1 sem. hr.

Topics in various fields of genetics. Subjects will vary from semester to semester. This course may be repeated for credit with consent of the department head. Prerequisite: Biological Sciences 319 or consent of instructor.

425 *Radiation Biology* 4 sem. hrs.

Interactions of radiation at the molecular, cellular, organismic, and population levels. Lecture and laboratory. Prerequisites: Calculus, biochemistry or cell physiology, organic chemistry, physics, and genetics.

426 *Special Topics in Plant Physiology* 2 sem. hrs.

Lectures in selected areas of plant physiology: water and mineral relations, carbon and nitrogen metabolism, plant growth and development. Course may be repeated for credit. Prerequisite: organic chemistry.

428 *Enzymology* 3 sem. hrs.

Mechanism of action, isolation and characterization, biosynthesis, and kinetics of enzymes. Lecture and laboratory. Prerequisite: Biochemistry, calculus, or consent of instructor.

433 *Plant Anatomy and Histology* 3 sem. hrs.

Origin, development, and structure of tissues in vascular plants. Lecture and laboratory. Prerequisite: consent of instructor.

440 *Epidemiology* 3 sem. hrs.

Principles related to the incidence and control of epidemic diseases. Etiology, pathogenesis, host response, identification, and diagnostic procedures. Lecture. Prerequisite: Biological Sciences 260.

464 *Advanced Mycology* 3 sem. hrs.

Isolation, culturing, physiology, and ultrastructure of fungi. Lecture and laboratory. Prerequisite: Biological Sciences 334 or consent of instructor.

466 *Microbial Physiology* 5 sem. hrs.

Fundamental concepts and techniques of bacteriology. Anatomical, nutritional, and metabolic properties. Microbiological assays. Prerequisites: Biological Sciences 260 and chemistry through quantitative analysis and organic. Lecture and laboratory.

467 *Microbial Genetics* 5 sem. hrs.

Heredity in microorganisms and the viruses as a branch of microbiology. Lecture and laboratory. Prerequisites: Biological Sciences 260 and 319 and quantitative analysis and organic chemistry or consent of instructor.

480 *Histology* 4 sem. hrs.

Microscopic anatomy of cells, tissues, and organs of vertebrates. Lecture and laboratory.

481 *Sensory Physiology* 3 sem. hrs.

Structural and functional aspects of the sensory systems. Topics considered include photoreception, chemoreception, action potentials, hearing, sensory pathways and associated brain centers. Lecture and laboratory. Prerequisite: Biological Sciences 482 or 483, Biophysics, or consent of instructor.

482 *Mammalian Physiology* 4 sem. hrs.

The physiology of muscular, nervous and circulatory organ systems. Lecture and laboratory. Prerequisite: Course in vertebrate anatomy and organic chemistry, or consent of instructor.

483 *Mammalian Physiology* 4 sem. hrs.

The physiology of the respiratory, excretory, digestive and reproductive systems. Lecture and laboratory. Prerequisite: courses in vertebrate anatomy and organic chemistry or consent of instructor.

484 *Human Development and Behavior* 3 sem. hrs.

Basic genetics, developmental biology, physiology, and endocrinology for students in education, psychology, health and physical education, and special education.

485 *Endocrinology* 4 sem. hrs.

Endocrine glands of vertebrates and invertebrates emphasizing the function of selected hormones. Lecture and laboratory. Prerequisite: Biochemistry.

486 *Ethology* 4 sem. hrs.

The behavior of animals under natural conditions as interpreted through comparative studies and experimentation. Lecture and laboratory. Prerequisite: two semesters of college zoology.

490 *Research in the Biological Sciences* Variable credit

Research involving the gathering of data to form the basis for the thesis required for the Ph.D. Approval of the head of the department is required.

491 *Internship-Seminar in College Teaching in the Biological Sciences* 3 sem. hrs.

Credit for the course is given in Education (see Education 491).

492 *Advanced Embryology* 4 sem. hrs.

Concepts of embryonic fields, differentiation, evocation, competence, and regeneration. Laboratory exercises to demonstrate fundamental mechanisms of development in the amphibian and chick. Lecture and laboratory. Prerequisites: Biological Sciences 319 and 392.

493 *Biophysics* 3 sem. hrs.

The application of principles of physics to biological problems. Attention will be given to: electromagnetic radiation, optics and microscopy, radioactivity, and bioelectric potentials. Lecture and laboratory. Prerequisites: Calculus, general physics, and chemistry, or consent of instructor.

495 *Comparative Animal Physiology* 3 sem. hrs.

A comparative study of the physiology of the organ systems with emphasis on invertebrates. Topics considered include osmotic balance, nutrition, nitrogen excretion, respiration, metabolism, endocrine mechanisms, excitation and contractility, and bioluminescence. Lecture and laboratory. Prerequisites: invertebrate zoology and organic chemistry, or consent of instructor.

497 *Research Seminar* 1-6 sem. hrs.

Introduction to bibliography, methods of scholarly research and critical evaluation of research. Must be taken by first year graduate students in the secondary curriculum unless the department requires Education 475. May be repeated by more advanced students who desire direction and constructive criticism as they pursue a special research problem.

499 *Independent Research for the Master's Thesis* 1-6 sem. hrs.

A student electing the thesis option must take from four to six hours of 499. A proposal for research must be on file before registration for this course is approved by the student's adviser. While registration beyond six hours may be permitted for the convenience of the student, he may not count more than a total of six hours of 499 among the 32 required for the master's degree.

BOTANY

(See Biological Sciences)

BUSINESS

Acting Dean of the College of Business: Lewis R. Toll *Office:* Turner Hall 210-B

TEACHING STAFF

Department of Accounting

Acting Head of Department: Thomas A. Brigham *Office:* Turner Hall 210C

Professor: Raymond W. Esworthy

Associate Professor: John H. Rich

Assistant Professor: Thomas A. Brigham

Department of Business Administration

Acting Head of Department: H. Earle Reese *Office:* Turner Hall 210E

Professors: Harold F. Koepke, H. Earle Reese

Associate Professor: James A. Hallam

Department of Business Education

Acting Head of Department: Arnold Condon *Office:* Turner Hall 210-K

Professors: Arnold Condon, Thomas B. Martin, Lewis R. Toll

Associate Professor: Warren S. Perry

The faculty of the College of Business offers programs leading to the M.S. degree in Business and the M.S. or M.S. in Ed. degree in Business Education. The Master's program in Business is administered in the Department of Business Administration, while the Master's Program in Business Education is administered in the Department of Business Education. The graduate faculty of all three departments in the College offer graduate courses which may be a part of a student's program.

COURSES

311 *Fundamentals of Life and Health Insurance* 3 sem. hrs.

General consideration of personal and business risks. Principles of life and health insurance and their applications.

312 *Fundamentals of Property and Liability Insurance* 3 sem. hrs.
Principles of property insurance with fundamental application to individuals, risk in fire, marine, bond, and casualty areas.

320 *Practicum in Office Machines Instruction* 2-3 sem. hrs.

Designed to serve as a "professional education" course for vocational teachers of office education programs (as described in Illinois State Plan for Vocational Education, Bulletin 182—Series B, Revised). Emphasis will be on recognition of the new ideas and clarification of the "how" and "why" of office machines, and on the application of demonstration teaching techniques and laboratory supervision. Prerequisite: Office Practice 211.

321 *Practicum in Data Processing Instruction* 2-3 sem. hrs.

Designed to apply to the "professional education" needed for vocational teachers of "in-school" clerical programs, and to provide instruction and practice in teaching methodology to teachers of office practice, clerical practice, office machines, and business data processing. Emphasis will be on systems analysis and on the recognition of new developments in business data processing. Prerequisite: Business Data Processing 360, and consent of department head.

330 *Governmental Accounting* 3 sem. hrs.

Procedures, accounts, and reports of governmental agencies; the solution of problems embracing the practical application of fund accounting and the interpretation of financial reports of various government units. Prerequisite: 5 semester hours of accounting.

331 *Cost Accounting* 3 sem. hrs.

Elements of production costs, including materials, labor, and overhead or burden; the job-cost, the process-cost, and the standard cost systems; the solution of problems embracing the practical application of costing methods, formulas, and standard costs. Prerequisite: 9 semester hours of accounting.

332 *Advanced Cost Accounting* 2 sem. hrs.

Consideration of current accounting problems involving cost-column-profit analysis, capital budgeting, relevant costs, and other advanced cost accounting topics related to management decisions. Prerequisite: Cost Accounting 331.

333 *Income Tax Procedure* 3 sem. hrs.

Federal income tax provisions affecting individuals and business enterprises, and problems involved in tax computations. Prerequisite: 6 semester hours of accounting.

340 *Production Management* 3 sem. hrs.

Principles and techniques of management as they apply specifically to the production of physical goods. Production planning and control, methods analysis and work measurement, inventory control, quality control, and plant location and layout. Prerequisite Business 253 or consent of Head of Department.

346 *Investments* 3 sem. hrs.

Introduction to the appraisal of securities and the management of investment funds, essentially from the viewpoint of the individual investor. Stresses principles of value determination and risks association with various types of securities, including bonds, preferred stocks, and common stocks and their use in portfolios. Coverage includes government securities, industrials, utilities, and financial institutions.

356 *Business Finance* 3 sem. hrs.

Problems and methods of financing business, function of banking, business risks as an influence on financial management, and interpretation of the security markets. Prerequisite: Social Sciences 171 or Business Education 252.

357 *Retailing* 2 sem. hrs.

Organization and operation of retail stores and service establishments of various types with some consideration of the application of the content to distributive education and general business subjects of the high school. Whenever feasible, the local business community will be used as a laboratory for the observation and analysis of retailing practice. Prerequisite: Social Sciences 171 or Business Education 252.

358 *Marketing Management* 3 sem. hrs.

The development and evaluation of the marketing plan. Emphasis on the role of the marketing executives in the integration and synthesis of the marketing processes used to increase the profitability of manufacturers and distributors of consumer and industrial goods. Includes analysis of actual and hypothetical cases. Prerequisite: Marketing 255.

359 *Marketing Research* 3 sem. hrs.

The nature and scope of marketing research. Research design, specific marketing research procedures, and the research report. A marketing research project will be conducted. Prerequisite: Business 255.

360 *Business Data Processing* 3 sem. hrs.

Business data processing involving the fundamental characteristics of mechanical and electronic systems and their application to business. Prerequisite: 6 semester hours of accounting.

361 *Business Systems Analysis for Computer Programming*
3 sem. hrs.

Systems planning, coding, and programing for the digital computer as it is used in business for data processing. Includes instruction and laboratory work on the IBM 360 Data Processing System, and some instruction on other types of computers. Symbolic languages will be used for the programing of common data processing applications such as: payroll, inventory control, expense analysis, and financial statements. Prerequisite: Business Education 360 or consent of department head.

380 *Organization and Administration of Cooperative Vocational
and Distributive Education Programs* 4 sem. hrs.

Provides the background education and the teaching techniques needed for the organization and administration of vocational office and distributive education in the cooperative part-time program involving coordinated work experience. Includes some discussion of in-school programs of distributive education. Prerequisite: Consent of department head.

381 *Directed Occupational Experience for Office and
Distributive Education* 4 sem. hrs.

One of the professional courses required by the Illinois Plan for Vocational Education as a part of the education of a teacher-coordinator of office or distributive education. It will also serve as six months credit in occupational experience for in-school teachers of vocational office or distributive education according to this state plan. Coincident with the course work, a student must execute a plan for the simultaneous acquisition of approved on-the-job experiences. Usually the course will be offered during the eight-week summer session. The actual time schedule for the class sessions and consultations with the instructor will vary with the types of jobs and job locations of the students.

400 *Seminar in Business Education* 2 sem. hrs.

Consideration of business education problems of greatest concern to the group and to the individual student by means of conferences and informal discussion.

402 *Administration and Supervision of Business Education*
2 sem. hrs.

Fundamental concepts and techniques needed by administrators, supervisors, department heads, and teachers of business education in planning and carrying out realistic programs of business education in junior and senior high schools and junior colleges.

404 Occupational Guidance in Business Education 2 sem. hrs.

Methods by which a secondary school teacher may assist students in getting the type of training adapted to their interests, abilities, and aptitudes as an aid to their making satisfactory adjustments in business occupations.

406 Readings in Management 2 sem. hrs.

Selected readings from the literature of general management, including recognized classics in the field and other significant contributions of both theoretical and technical nature. Prerequisite: 15 semester hours in accounting and/or business administration.

408 Problems of Office Management 3 sem. hrs.

Detecting, analyzing, and solving problems applicable to large or small offices. Principles of office organization, layout, and operation are discussed and applied to cases under consideration. Critical evaluation of office operations resulting from application of data processing systems. Individual and committee investigations are conducted, and selected office managers are called upon to serve as resource persons.

410 Consumer Business Problems 2 sem. hrs.

Application of business knowledge to the solution of practical problems of the consumer. Emphasis on class and individual problem solving in the areas of personal finance and investment involving a consideration of interacting economic forces and technical business operations.

412 Legal Aspects of Business Decisions 2 sem. hrs.

Brief consideration of legal reasoning as the developmental process of law, followed by a comprehensive presentation of how legal problems are resolved in the course of organization, operation and termination of business enterprises.

420 Financial Management 3 sem. hrs.

Analysis of financial problems of business enterprises and the formulation of financial policies. Financing of current operations and long term capital needs, income management, and expansion policies. Prerequisite: Business Education 356.

430 Improvement of Instruction in Bookkeeping and General Business 3 sem. hrs.

Bookkeeping subjects consisting of first- and second-year bookkeeping, personal record keeping, general clerical practice, and clerical office practice. General business subjects will consist primarily of general business training, business law, business arithmetic, commercial geography, and consumer education. The instructor will draw from his own experiences, from those of the group, from the writings of authorities in the field, and occasionally from the ideas of visiting lecturers and demonstrators. Prerequisite: teaching experience or student teaching.

432 Auditing 3 sem. hrs.

Ethics of the accounting profession; programs of audit of various accounts and application of auditing principles in verification of financial statements; internal control as related to audit techniques; preparation of working papers and reports; trends and developments in the accounting profession.

440 Improvement of Instruction in Secretarial Subjects 3 sem. hrs.

Secondary school subjects included are vocational typewriting, personal typewriting, shorthand, transcription, business English, and secretarial office practice. The instructor will draw from his own experiences, from those of the group, from the writings of authorities in the field, and occasionally from the ideas of visiting lecturers or demonstrators. Prerequisite: teaching experience or student teaching.

450 *Improvement of Instruction in Distributive Education*

3 sem. hrs.

Organization, administration, and supervision of programs of distributive education, with emphasis on the cooperative part-time programs. Methods, materials, and equipment in teaching salesmanship, retailing, and other courses of training for distributive occupations.

457 *Problems in Retail Store Management* 2 sem. hrs.

Investigation and critical discussion of problems frequently encountered in managing a retail store, with special attention given to the small store. Principles and procedures of store management developed as they relate to the cases chosen for analysis. Visits to stores and participation by selected store managers in group discussions are regular parts of the course.

460 *Personnel Management* 3 sem. hrs.

Organization and administration of the personnel program in business and governmental institutions. Principles and procedures relating to selection, placement, and training of employees, and to the maintenance of employee morale and efficiency. Administration of employee services, wage and salary programs, and negotiation with organized labor. Analysis of actual business cases.

470 *Purchasing Policies and Procedures* 3 sem. hrs.

Purchase of materials, supplies, and equipment as a major business function. Organization for purchasing, internal requisitioning, and stock control. Basic procurement principles, processes, and problems in industrial, governmental, and institutional organizations. Actual business cases analyzed.

480 *Seminar in Management* 3 sem. hrs.

Intensive analysis of management principles and practices as they apply to financial and risk management, marketing management, office management, personnel management, and production management. Case studies of both real and hypothetical business organizations will permit individual research by students in various phases of management theory and practice.

491 *Internship-Seminar in College Teaching in Business Education*
3 sem. hrs.

Credit for this course is given in Education (see Education 491).

499 *Independent Research for the Master's Thesis* 1-6 sem. hrs.

A student electing the thesis option must take from four to six hours of 499. A proposal for research must be on file before registration for this course is approved by the student's adviser. While registration beyond six hours may be permitted for the convenience of the student, he may not count more than a total of six hours of 499 among the 32 required for the master's degree.

CHEMISTRY

TEACHING STAFF

Head of the Department: Bernard L. Ryder. *Office:* Science Building 426.

Professors: Robert C. Duty, G. Harlowe Evans, Thaddeus C. Ichniowski, Bernard L. Ryder

Associate Professors: Arthur D. Bond, Thomas F. Edwards, Raymond H. Hunt, Richard C. Reiter

Assistant Professors: Roger K. Bunting, Norman Pawlowski

MASTER'S DEGREE IN CHEMISTRY

The degrees of M.S. and M.S. in Ed. with a major in chemistry are offered for candidates who elect to follow a core program of courses prescribed by the department and in addition demonstrate a proficiency in the reading

of French, German, or Russian. A thesis based on original research is required for a master's degree in chemistry. University requirements for master's degrees are listed on pages 19-23.

MASTER'S DEGREE IN PHYSICAL SCIENCES

The department offers a program jointly with the Department of Physics leading to the degrees of M.S. and M.S. in Ed. The program is flexible, permitting a combination of the two fields.

COURSES

300 *Basic Concepts of Chemistry* 3 sem. hrs.

Modern aspects of chemistry, with emphasis on recent developments in the area of atomic structure. Lecture and laboratory. Designed for teachers of elementary and junior high school science with limited background in the area of chemistry. Not open to students who have had one semester of college laboratory chemistry within the past ten years, or with first or second fields in chemistry, physics, or physical sciences. Prerequisite: Physical Sciences 100 or 205 or two years of teaching experience.

301 *Problems in the Teaching of High School Physical Sciences* 3 sem. hrs.

A study of modern methods and problems confronting the teachers of Physical Science. Involves a careful study of CBA, Chem Study, PSSC, and regular high school chemistry and physics. Brief overview of the K-12 physical science program will be undertaken. For teaching majors only. Prerequisite: 10 semester hours each of Physics and Chemistry.

302 *Municipal and Industrial Science* 3 sem. hrs.

Specific aspects of community and industrial problems. Includes trips to industries and research laboratories. Lectures and discussion periods involving related chemical and physical principles are coordinated with the field trip program. Gives a background in applied science as an enrichment for classroom teaching. Prerequisite: Twenty-two hours of physical sciences including one year of general chemistry, one year of general physics, and two 200- or 300-level courses in chemistry or physics.

305 *General Science* 3 sem. hrs.

Objectives of general science. Selection of subject matter, tests, texts, workbooks, equipment, and supplies will be considered. For teachers qualified to teach general science in the elementary, junior high, and senior high schools.

306 *History of Chemistry* 2 sem. hrs.

Development of chemistry from early times to the present. Prerequisite: 16 semester hours of chemistry.

308 *Chemical Literature* 2 sem. hrs.

Introduction to chemical literature in journals, handbooks, abstracts, monographs, and patents. Problems requiring literature searches in all fields of chemistry. Prerequisite: Twenty semester hours of chemistry.

311 *Laboratory Instrumentation* 3 sem. hrs.

Lecture-Laboratory. Instruments used in chemical analysis. Applications to qualitative and quantitative analyses will be stressed in the laboratory. Not open to chemistry majors—see Chemistry 315. Prerequisite: Ten semester hours of chemistry.

315 *Instrumental Methods of Analysis* 3 sem. hrs.

A survey of instrumental methods of chemical analysis including electrometric, spectrophotometric and optical procedures. Prerequisite: Chemistry 215 or consent of instructor, Chemistry 362 or concurrent registration.

320 *Organic Chemistry* 3 sem. hrs.

Chemistry of organic compounds with emphasis on unifying mechanistic features of organic reactions. Prerequisite: Chemistry 230 or permission of department.

321 *Organic Chemistry Laboratory* 2 sem. hrs.

Laboratory practice in newer techniques and methods of organic chemistry. Two three-hour laboratory periods per week. Prerequisite: Prior or simultaneous registration in Chemistry 320 or permission of the department.

323 *Qualitative Organic Analysis* 3 sem. hrs.

Identification of organic compounds. Three class meetings per week including two three-hour laboratory periods. Prerequisite: Chemistry 320.

325 *Modern Methods and Techniques in Organic Chemistry*

2 to 3 sem. hrs.

Modern laboratory techniques associated with synthesis, quantitative analyses, distillations and chromatography. Organic literature searches will be stressed. Prerequisite: Chemistry 321 or equivalent.

342 *Introduction to Biochemistry* 3 sem. hrs.

Chemistry of the lipids, carbohydrates, nucleic acids, vitamins, enzymes; their degradation, formation, and associated energy changes in biological processes. Three class meetings per week: Prerequisite: Chemistry 215 and 113 or 230.

343 *Introduction to Biochemistry Laboratory* 2 sem. hrs.

Application of biochemical principles and methods discussed in the introductory companion course, Chemistry 342. Two three-hour laboratory periods per week. Prerequisite: Chemistry 342 or concurrent enrollment.

350 *Inorganic Chemistry* 3 sem. hrs.

A discussion of the descriptive chemistry of families of elements based on modern theory. Prerequisite: Chemistry 362 or concurrent enrollment.

351 *Inorganic Preparations* 2 sem. hrs.

Preparation of typical inorganic compounds illustrating special and more advanced techniques. Six hours of laboratory and conference per week. Prerequisite: Chemistry 350 or concurrent enrollment.

358 *Radiochemistry* 2 sem. hrs.

A survey of nuclear models, theories, and decay schemes. Application of radiochemical methods to elucidation of reaction mechanisms and molecular structure. Prerequisite: Chemistry 362.

360 *Physical Chemistry* 3 sem. hrs.

First in a series of theoretical chemistry dealing with gases, liquids, solutions, thermochemistry, thermodynamics, chemical and phase equilibrium, kinetic theory, and chemical kinetics. Prerequisites: One year of general physics; one year of general chemistry; eight semester hours of chemistry courses numbered 200 or higher; Mathematics 116.

361 *Physical Chemistry Laboratory* 1 sem. hr.

Laboratory studies of the derivations and applications of the principles treated in physical chemistry. One three-hour laboratory period per week. Prerequisite: Chemistry 360 or concurrent enrollment.

362 *Physical Chemistry* 3 sem. hrs.

Continuation of Chemistry 360, including ionic equilibrium, electrical conductance, electromotive force, photochemistry, spectroscopy, crystals, molecular theory. Prerequisite: Chemistry 360.

363 Physical Chemistry Laboratory 1 sem. hr.

Laboratory studies of the derivations and applications of the principles treated in physical chemistry. One three-hour laboratory period per week. Prerequisite: Chemistry 362 or concurrent enrollment.

380 Topics in Contemporary Chemistry 3 sem. hrs.

New concepts and recent developments in the fields of organic, inorganic, and analytic chemistry. Prerequisite: Chemistry 215 and 320.

404 Electronics for Scientists 3 sem. hrs.

Circuits of scientific instruments, electronic principles, servo systems, comparison measurements, operational amplifiers, feedback control, digital circuits, transistors, and vacuum circuits. Two three-hour laboratories and one lecture per week. Prerequisite: Chemistry 315 or graduate status in physics.

410 Advanced Analytical Chemistry 3 sem. hrs.

Advanced study of chemical analysis with emphasis on the fundamental principles of analytical chemistry. Lecture and laboratory. Prerequisite: Chemistry 315 or permission of instructor.

420 Advanced Organic Chemistry 3 sem. hrs.

An advanced study of organic chemistry with emphasis on stereoisomerism, conformational analysis, resonance, synthesis, elucidation of structure, heterocyclic, and natural products chemistry. Prerequisite: Chemistry 320 or equivalent.

422 Mechanisms in Organic Chemistry 3 sem. hrs.

A critical examination of nucleophilic, electrophilic and free radical reaction mechanisms including the study of the stability and reactivity of carbanions, carbeneum ions and carbenes. Hammett functions, kinetic isotope effects, aromaticity and carbon acidity will be integrated into the course. Prerequisite: Chemistry 320 and credit or registration in 360.

440 Special Topics in Biochemistry 3 sem. hrs.

Advanced study in selected areas of biochemistry. May be repeated for credit in consecutive years as different topics are introduced. Prerequisite: Chemistry 342.

450 Advanced Inorganic Chemistry 3 sem. hrs.

Interpretation and discussion of the subject matter of inorganic chemistry from the viewpoint of modern theory. Prerequisite: Chemistry 350 and 362.

452 Physical Inorganic Chemistry 3 sem. hrs.

Study of theoretical factors related to the properties of matter, including symmetry elements, group theory, and the application of various instrumental techniques to the study of the structure of inorganic compounds. Prerequisites: Chemistry 315 and either 350 or 450.

460 Quantum Chemistry 3 sem. hrs.

An introduction to the methods of obtaining exact and approximate solutions to the Schrodinger equation, and the use of these solutions in the description of atomic and molecular systems. Prerequisites: Chemistry 363, Mathematics 340.

462 Chemical Thermodynamics and Introduction to Statistical Thermodynamics 3 sem. hrs.

An expansion of the introduction to chemical application of Thermodynamics given in Physical Chemistry 362, and an introduction to the methods and results of application of the theorems of statistical mechanics to molecular models. Prerequisite: Chemistry 460.

490 Research in Chemistry Variable credit

Research involving the gathering of data to form the basis for the thesis. Open only to advanced graduate students. This course can be repeated for credit. Approval of the head of the department is required.

491 Internship-Seminar in College Teaching in Chemistry

3 sem. hrs.

Credit for the course is given in Education (see Education 491).

492 Seminar in Chemistry 1 sem. hr.

Survey of current work in chemistry both in pure research and in the application of newer theories of chemistry to the teaching of chemistry on the secondary and college levels.

494 Seminar in Chemistry 1-2 sem. hrs.

Survey of current work in selected areas of chemical research. May be repeated for credit for a total of two semester hours.

499 Independent Research for the Master's Thesis 1-6 sem. hrs.

A student electing the thesis option must take from four to six hours of 499. A proposal for research must be on file before registration for this course is approved by the student's adviser. While registration beyond six hours may be permitted for the convenience of the student, he may not count more than a total of six hours of 499 among the 32 required for the master's degree.

ECONOMICS

TEACHING STAFF

Head of the Department: Warren R. Harden. Office: 412 College Avenue

Professor: Warren R. Harden

Associate Professor: Douglas Poe

MASTER'S DEGREE IN ECONOMICS

The Department of Economics offers work leading to the following degrees: M.A., M.S. University requirements for these degrees apply.

MASTER'S DEGREE IN THE SOCIAL SCIENCES

The department offers work jointly with the departments of history, political science and sociology-anthropology, leading to the following degrees: M.A., M.S., M.S. in Ed. The program is interdisciplinary, including courses in two or possibly three of the social sciences (economics, history, political science, sociology-anthropology). A thesis is required. University requirements for master's degree are listed on pages 19-23.

COURSES

306 Regional and Area Studies 1 to 9 sem. hrs.

An intensive study of particular lands, environments, cultures, and peoples. May be given in cooperation with other departments, on or off campus. The areas to be studied, participating departments, and credit hours available in the several departments, will be announced each time the course is offered.

335 Transportation 3 sem. hrs.

Development of railway, waterway, air, and highway transportation. Considerable attention is given to the major problems growing out of increased traffic and its regulation. Major emphasis on contemporary conditions and problems. Prerequisite: Economics 171.

340 Intermediate Microeconomic Theory 3 sem. hrs.

Intense and critical examination of the economic theory underlying the operation of a system of free enterprise. Prerequisite: Economics 171.

341 *Intermediate Macroeconomic Theory* 3 sem. hrs.

Detailed examination of the theoretical basis of modern explanations of economic stability and relative shares in the national income. Prerequisite: Economics 171.

345 *International Economics* 3 sem. hrs.

Designed to give such basic aspects of the international economy as the reasons for trade, the terms of trade, and the adjustments necessary to achieve the highest possible plane of living. Particular emphasis on the tariff issue and the purposes and functions of the international financial institutions now extant. Prerequisite: Economics 171.

350 *Public Finance* 3 sem. hrs.

An attempt to discover criteria for determining (1) how much governments should spend and for what and (2) the economic and equity effects of different methods of obtaining government revenue. Prerequisite: Economics 171.

372 *History of Economic Thought* 3 sem. hrs.

Economic thought and theory from ancient to modern times. Emphasis on those ideas which influenced the economic development of western civilization. Prerequisite: Economics 171.

390 *Selected Studies in Economics* 3 sem. hrs.

The field of study covered will vary each semester according to the interests and needs of the students and the availability of instructors. Provided different material is covered, the course may be taken more than once. Prerequisite: Economics 171.

400 *Survey of Current Economics* 1-6 sem. hrs.

For mature students who need an understanding of the basic tools of economic analysis. Compresses into a single semester matters ordinarily covered in two semesters of Economic Principles. Enrollment is limited to graduate students who have had no more than one semester of previous study in economics, or consent of the instructor.

415 *Contemporary Monetary Theory* 3 sem. hrs.

Advanced study of the role of money in an economy. The effects of changes in the quantity of money and its velocity of turnover on employment, income, consumption, and price levels. A comparison of the flexible version of the quantity theory with the national income theory. Implications of these theories to monetary policy. Prerequisite: Economics 273.

435 *Seminar in Transport and Public Utility Pricing* 3 sem. hrs.

Prerequisites: Economics 370 or 377.

445 *International Economic Analysis* 3 sem. hrs.

An analysis of the adjustments in the balance of payments among countries. The mechanisms through which income effects, price effects, and changes in commercial policy may restore equilibrium to the balance of payments of a country. The extent to which these forces are automatic or managed is also considered. Prerequisite: Economics 379.

450 *Theory of Public Finance* 3 sem. hrs.

Detailed examination of the various concepts of equity in taxation. Development of the theory of tax shifting. Consideration of various criteria for government spending. Evaluation of fiscal policy stabilization tools. Analysis of the burden, economic effects, and possibilities of retirement of the public debt. Prerequisite: Economics 375.

451 *Financing State and Local Governments* 3 sem. hrs.

Types of spending and possible sources of revenue for state and local governments; probable economic effects and administrative problems inherent in each.

490 *Seminar in Economics* 1-4 sem. hrs.

491 *Internship-Seminar in College Teaching in Economics*
3 sem. hrs.

Credit for the course is given in Education (see education 491).

492 *Graduate Readings in Economics* 1-3 sem. hrs.

For the graduate student who would benefit from a more specialized independent type of study adapted to his background and needs. To be taken by permission of the head of the department and the instructor involved.

497 *Research Seminar* 1-6 sem. hrs.

Introduction to bibliography, methods of scholarly research and the critical evaluation of research in the field. May be repeated by more advanced students who desire direction and constructive criticisms as they pursue special research problems.

499 *Independent Research for the Master's Thesis* 1-6 sem. hrs.

A student electing the thesis option must take from four to six hours of 499. A proposal for research must be on file before registration for this course is approved by the student's adviser. While registration beyond six hours may be permitted for the convenience of the student, he may not count more than a total of six hours of 499 among the 32 required for the master's degree.

EDUCATION

TEACHING STAFF

Head of the Department: Leo E. Eastman. *Office:* Schroeder Hall 406.

Professors: Eric Baber, E. Scott Blankenship, Lessie Carlton, Leo E. Eastman, Henry J. Hermanowicz, Charles Hicklin, Richard Hulet, Homer Knight, Elden Lichty, William Lueck, Ralph Meyering, Robert Moore, Morton D. Waimon, William Zeller

Associate Professors: Charles W. Edwards, Clarence Kurth, David Livers, M. L. Miller, Gary Ramseyer, Dent Rhodes

PROGRAMS OFFERED

Master's programs with advisement in the Department of Education are offered in Guidance and Counseling, and Supervision. University requirements for master's degrees are given on pages 19-23.

Guidance and Counseling

The following courses are required in the master's degree program in Guidance and Counseling: Education 340, 360, 459, 460, 462, and Psychology 334 and 432. Students who have taken any of the required courses at the undergraduate level may take additional elective hours.

Additional courses are selected following recommendations of the adviser with reference to areas of specialization.

Areas of specialization are: Elementary Guidance and Counseling, Secondary Guidance and Counseling, and Counseling in Higher Education.

Persons completing this program will be eligible for the Specialist Certificate in Guidance in the State of Illinois.

Reading

Requirements for an M.S. in Ed. with specialization in reading will vary somewhat depending upon the area or level of reading in which the graduate student plans to concentrate. However, all students are expected to have a common base of knowledge about reading processes, diagnosing reading difficulties, and providing desirable programs in reading. The Dean of the College of Education will assign students to the appropriate department for advisement. Advisement of students will depend upon their selection from among the three following areas of concentration:

A. Clinical Reading. Major emphasis upon diagnosis and educational accommodation of special cases of severe reading disability. Advisement: Head, Department of Special Education.

B. Elementary School Reading. Emphasis upon the roles of teachers and reading consultants in developmental reading program for elementary education. Advisement: Head, Department of Elementary Education.

C. General, Secondary, and Higher Education Reading. Developmental programs and general functions of reading specialists or consultants and the kinds of services provided in general, secondary, or higher education. Advisement: Head, Department of Education.

From 22 to 24 semester hours are required, including the following:

1. Ed. 475, 476, and one course in history or philosophy of education.
2. 15 semester hours of study from among the following reading courses as advised: 301, 303, 307, 401, 402, 405, 408, and 419.
3. Additional courses to complete the program requirements as advised.

Supervision

While courses and advisement in this field fall mainly in the Department of Education, the Dean of the College of Education may assign students to advisers in other departments of the college for study of supervision in special areas.

The following courses are required in the Supervision curriculum, regardless of the specialization: Education 387, 437, 475, 476, 477, and 478.

A graduate course is also required for all candidates in the Supervision curriculum from one of the following fields: History of Education, Philosophy of Education, or Social Foundations of Education.

If specialization is in Elementary Supervision, the additional course, Education 403, is required.

If specialization is in the Supervision of Student Teaching, the additional course, Education 497, is required.

Additional courses are to be selected following recommendations of adviser. Such courses may include those to be taken in other departments.

Students entering this curriculum should hold a teaching certificate. Students without teaching experience may be admitted to the program but will be expected to obtain such experience prior to admission to candidacy for the degree.

Persons completing this program will be eligible for a supervisory certificate in the State of Illinois.

COURSES

303 Practicum in University Reading Study Center 3 sem. hrs.

Those enrolled for the Practicum shall meet six hours each week. Through observation and participation, students enrolled in the Practicum will learn the skills necessary for working in a reading-study center at the high school, junior college, and senior college level. The enrollment is limited to ten students with senior or graduate status. Prerequisites: Education 218 or 307 and permission of the instructor.

309 Adult Education Programs 3 sem. hrs.

Instruction, direction, and administration of public school adult education. The adult learner, his needs and characteristics; facilities, staff, supervision and administration of adult education programs; the relation of public school adult education programs to other education programs under the sponsorship and direction of the public schools.

324 Selected Studies in History of Education 1-3 sem. hrs.

The field of study will vary according to the interest and needs of the students and the availability of instructors. Provided different material is covered, the course may be taken for credit more than once. Prerequisite: Education 335 or one upper level course in history or consent of the instructor.

326 *Selected Studies in Philosophy of Education* 1-3 sem. hrs.

The field of study will vary according to the interest and needs of the students and the availability of instructors. Provided different material is covered, the course may be taken for credit more than once. Prerequisite: Education 231, or one upper level course in Philosophy, or consent of the instructor.

328 *Social Foundations of Education I* 3 sem. hrs.

The utilization of social scientific concepts in social sciences in the study of education. Emphasis on the organization and functions of the school as a social institution. Prerequisites: Completion of general education requirements in social science or consent of instructor.

331 *Independent Study in Education* 1-3 sem. hrs.

Intensive, independent study on a problem or topic in education. The number of credit hours received depends upon the nature of the topic or problem studied. A formal written paper is required. Provided different subject matter is covered, the course may be taken more than once, but no more than six semester hours of cumulative credit may be earned. Prerequisite: Permission of the instructor and Head of the department.

333 *The Junior High School* 2 sem. hrs.

Function of the junior high school; characteristics and needs of early adolescents; articulation with the elementary and high schools; traditional and core curriculums; organization, administration, and evaluation of programs for early adolescents.

334 *Public Relations for Education* 2 sem. hrs.

Study of basic methods and theories of public relations. Concentration on public relations in establishing and maintaining cooperation between the school and community. Special class projects include participation in a public relations conference, student investigations and reports in areas of interest, field trips, as well as lectures by guests representing communication media.

335 *History of Education* 3 sem. hrs.

Development of European and American educational systems and programs. Emphasis on the historical perspective of modern educational problems.

336 *Introduction to Comparative Education* 3 sem. hrs.

A comparative analysis of the major ideas and institutions of selected national systems of education. Emphasis on the investigation of problems relevant to developments in American education.

337 *Programed Learning* 3 sem. hrs.

Construction and evaluation of programed learning; critical analysis of learning theory as it relates to programed learning. Use of programed materials in the classrooms.

340 *Statistics I* 3 sem. hrs.

Basic statistics used in education and the behavioral sciences. Intensive study of frequency distributions, measures of central tendency and dispersion, and standard scores. Sampling error theory, simple hypothesis testing, correlation techniques, and regression analysis are also covered. The emphasis is on application and interpretation.

360 *Principles of Guidance* 2 sem. hrs.

Backgrounds, philosophy, and services in school guidance programs. Examination of the appraisal, informational, and counseling services. Emphasizes the role of the classroom teacher as well as the organization of guidance activities.

365 *Production of Instructional Materials* 3 sem. hrs.

Production of a variety of projected and non-projected materials for classroom use. Planning, evaluating, and organizing audiovisual presentations. Funda-

mental skills of preservation, compilation, adaptation, lettering, enlargement, reduction, duplication and production of audio materials will be demonstrated and laboratory practice will be provided. Prerequisite: Education 240.

366 Advanced Audiovisual Production 3 sem. hrs.

Advanced topics and techniques of production, such as planning, storyboard-ing, scripting, photosketching, etch bleaching, and audiovisual synchronization. Laboratory practice in designing and producing material for individualized instruction, large group presentation and other multi-media configurations. Pre-requisites: Education 365 and Education 240 or permission of instructor.

387 Measurement and Evaluation in Education 3 sem. hrs.

Basic principles underlying measurement and evaluation in education. Includes development, use, and improvement of standardized and teacher-made tests and self-rating devices. Stresses interpretation of test data and use of test results. Students may develop measurement and evaluation programs and undertake projects in their major fields. Appropriate for elementary, secondary and college levels.

399 Student Teaching 1-10 sem. hrs.

(See Professional Laboratory Experiences 399.)

402 Recent Research in Reading 3 sem. hrs.

Analysis of recent research in reading at the elementary, secondary, and college levels together with its implications in the areas of modified practices in the teaching of reading, materials of instruction, and teacher preparation.

405 Psychology of Teaching Reading 3 sem. hrs.

The study, analysis and investigation of psychological aspects of the act of reading.

408 Practicum in Reading for Classroom Teachers 3 sem. hrs.

This course is designed to prepare classroom teachers to help pupils in regular classrooms to overcome their reading problems. Through observation and participation in classrooms, students will become acquainted with ways of diagnosing and correcting reading difficulties. Individual and group conferences with the instructor will be scheduled. Prerequisite: Education 307 or permission of the adviser.

419 Seminar in Reading 3 sem. hrs.

The content of the course will depend upon the needs and backgrounds of the students. Group and individual study of current practices, trends, and issues in reading will be employed.

424 Educational Classics 3 sem. hrs.

Historic conceptions of education and their relevance to programs and practices today. Readings in the works of such leading educational thinkers as Plato, Locke, Rousseau, and Dewey. Prerequisite: one course in history or philosophy of education or consent of the instructor.

430 Workshop in Education 2-6 sem. hrs.

For experienced professional workers in the field of education. Emphasis given to serving superintendents, principals, supervisors, and teachers who are pre-sently responsible for some aspect of curriculum study and/or program improvement in their schools. Primary concern with analysis and solution of practical and on-the-job educational problems. Procedure: exact statement of problems for study; critical examination of the literature on research and existing practice in the problem to be followed by reports, discussions, and conclusions. Prerequisite: teaching experience.

431 *Individualized Field Work in Education* 2 or 3 sem. hrs.

In order to accommodate the individual needs of graduate students, a variety of direct experiences in working with elementary or high school students, public school curricula and staff, and/or community groups involved in public school programs are provided. Approval for selecting this course and arranging for individual field work must be made by the department head.

432 *Philosophy of Education* 3 sem. hrs.

Social forces and schools of philosophical thought which have contributed to education and which are influencing current educational practices. To help the student achieve a functional educational philosophy applicable in his teaching situations.

433 *The Audiovisual Directorship* 3 sem. hrs.

Principles of and practices in organizing and managing an audiovisual program in the individual school building and school system. Considers such problems as audiovisual services, facilities, finance, personnel, public relations and evaluation standards for all aspects of the program. Prerequisite: Education 240 or permission of the instructor.

434 *Audiovisual Research* 3 sem. hrs.

Critical analysis of selected research studies in audio-visual instruction, instructional communications and technology. Research methods and sources of data in major categories of media research. Prerequisite: Education 240, 475.

437 *Analysis of Teaching* 3 sem. hrs.

For various school personnel, including prospective college teachers of education who are interested in methodical study of teaching behavior. Major research attempts in assessing teacher effectiveness and problems connected with such efforts. Descriptive studies and conceptual systems of teaching, their nature and possible uses.

440 *Statistics II* 3 sem. hrs.

The logic of statistical inference. An examination of the statistical techniques most commonly employed in research in education and the behavioral sciences. Topics included are interval estimation the t and f tests, chi-square, one factor analysis of variance, multiple regression, and non-parametric statistics. The emphasis is on application and interpretation. Prerequisite: Education 340.

441 *Experimental Design* 3 sem. hrs.

The statistical principles of experimental design. Selection, analysis, and interpretation of the most widely employed designs are emphasized. Designs included are the simple randomized, factorial, repeated measures, randomized blocks, latin square, and analysis of covariance. Topics such as multiple comparisons, power and trend analysis are also covered. Prerequisites: Education 340, 440 (Statistics I and II).

460 *Guidance Appraisal* 2 sem. hrs.

Techniques of administering and interpreting student appraisal devices in elementary and secondary guidance programs with emphasis on non-standardized test devices and case study procedures. Prerequisite or concurrent registration: Education 360.

461 *Organization of Guidance Services* 2 sem. hrs.

The activation, organization, administration, and utilization of guidance services. Selection of personnel, in-service education of the staff, evaluation of the program, and steps in the introduction of a comprehensive program are considered. Prerequisite: Education 360.

462 *Practicum in Counseling and Guidance* 3 sem. hrs.

Provides the prospective guidance counselor with practical experience in counseling and related guidance activities under supervision. Prerequisite: Education 360 and Psychology 433.

463 *Group Procedures in Guidance* 2 sem. hrs.

Group guidance principles and applications. Emphasis upon the nature of groups, principles of group dynamics, and guidance applications of group procedures; orientation, units and courses in self-analysis, educational and vocational planning, and group counseling. Prerequisite: Education 360.

470 *Teaching in the Community (Junior) College* 2 sem. hrs.

Techniques and methods of teaching on the community college level; problems of articulating the community college and the high school; special qualifications needed for the community college teacher; his preparation and training; the use of examinations, marks, and records; specific problems and methods of the classroom peculiar to the various teaching fields.

471 *Community (Junior) College Administration* 2 sem. hrs.

Introduction to the administration and organization of junior college. Relationships with boards of control, community, administrators, faculty, and students. Legal aspects, records, financial support, and public relations.

472 *The Community (Junior) College* 3 sem. hrs.

History and development, functions, curricula, instruction and personnel problems in the community college. The community college is studied in relation to other units of the educational system.

473 *Seminar in the Community (Junior) College* 2 sem. hrs.

Specific problems related to the community college, such as problems of guidance and personnel work; sponsorship of out-of-class activities; improvement of instruction; and curriculum problems. The exact content of the course may vary from semester to semester. The problems will be selected, in part, according to the needs and interests of the students.

474 *Seminar in College Teaching* 3 sem. hrs.

Designed to give prospective college teachers a general overview of the diversified responsibilities, obligations, and knowledge associated with collegiate teaching. Curricula of higher education, understanding of college students, and prevailing problems in collegiate education are stressed in the seminar. Extensive reading in the field of collegiate education is expected of each student in addition to research relevant to college teaching in his own field of academic specialization. Close cooperation is maintained with each student's major department.

475 *Introduction to Research* 3 sem. hrs.

Selection of a research problem, collection of data, types of research, the research report, and use of the library in connection with the research problem. Elements of statistics are introduced. Emphasis is given to understanding and interpreting frequently used statistical concepts. Provides a background for the preparation of the thesis. Enables the student to become an intelligent consumer of the products of educational research.

476 *Curriculum Theory* 3 sem. hrs.

The nature of curriculum theory and the sources of knowledge utilized in the formulation of curriculum theory. Critical analysis of major curriculum patterns that have emerged in American education. Approaches to curriculum study, revision, and evaluation.

477 *Supervision of Instruction* 2 sem. hrs.

Principles underlying the improvement of instruction through supervision. Emphasizes the following supervisory needs: (a) an understanding of the leadership role; (b) an understanding of recent research concerning pupils, including learning; (c) an understanding of group dynamics, and (d) an understanding of action research and its application. Techniques for giving the understandings practical application are considered. Means are proposed for the evaluation of pupils, teachers, supervisors, and supervisory practice.

478 *Seminar in Supervision of Instruction* 3 sem. hrs.

491 *Internship-Seminar in College Teaching* 3 sem. hrs.

For students in the college teaching programs. Observation and teaching in the student's major area, with other experiences appropriate to academic involvement at the college level. Offered in cooperation with the student's major department.

495 *Seminar in Curriculum* 3 sem. hrs.

Exploration of major developments and experimental programs having an impact upon school curricula. Students will have an opportunity to identify certain curriculum innovations for depth study. Each innovation will be analyzed critically. Research data relevant to the innovation will be examined with problems and means of utilizing the innovation for curriculum improvement considered. Prerequisite: Advanced graduate standing or special permission of the instructor and Education 476.

497 *Professional Laboratory Experience* 3 sem. hrs.

The role of professional laboratory experiences in teaching and learning. Significant trends, philosophies, and programs of teacher education. Personnel responsible for supervision of pre-service and in-service teachers and for directing observations, participation, and individual studies of pupils and teachers. For experienced teachers, supervisors of instruction, school administrators, and college teachers associated with teacher education programs.

498 *Internship* 3-8 sem. hrs.

Opportunities to work with principals, superintendents, teachers, and lay groups in public school situations. Of special benefit to inexperienced students and for those preparing for administrative work in public schools. Assignments are made by the Dean of the Graduate School on recommendation of the student's academic adviser at least two months prior to beginning internship.

499 *Independent Research for the Master's Thesis* 1-6 sem. hrs.

A student electing the thesis option must take from four to six hours of 499. A proposal for research must be on file before registration for this course is approved by the student's adviser. While registration beyond six hours may be permitted for the convenience of the student, he may not count more than a total of six hours of 499 among the 32 required for the master's degree.

EDUCATIONAL ADMINISTRATION

TEACHING STAFF

Head of the Department: Ben C. Hubbard *Office:* 300 North Street

Professors: Elwood Egelston, Ben C. Hubbard

Associate Professors: Gerald L. Becker, G. Alan Hickrod, Clayton Thomas

PROGRAMS OFFERED

Work leading to a master's degree, specialist in education degree, and the Ed.D. and Ph.D. degrees is offered in Educational Administration.

MASTER'S DEGREE PROGRAM

At least 20 semester hours of Education are required, including Education 475, 476, 478, 479, and 481 and Sociology 465. Additional courses are selected following recommendations of the adviser in this curriculum.

Students without teaching experience may be admitted to this program but will be expected to obtain experience in education prior to admission to candidacy for the degree.

University requirements for master's degree programs are listed on pages 19-23.

SPECIALIST AND DOCTORAL PROGRAMS

The College offers work leading to the Specialist in Education degree and the Ed.D. and Ph.D. degrees in Educational Administration. These programs have as their major purpose the preparation of administrators in educational institutions at all levels. *Applicants for these programs must have at least two years of experience in education.* University requirements for these degree programs are listed on pages 24-28.

COURSES

331 *Independent Study in Education* 1-3 sem. hrs.
(See Education 331.)

430 *Workshop in Education* 2-6 sem. hrs.
(See Education 430.)

431 *Individualized Field Work in Education* 2 or 3 sem. hrs.
(See Education 431.)

478 *Legal Bases of Education* 3 sem. hrs.

The conceptual and structural design of public education and the American legal system. Includes study of constitutional law, statutory enactments, and judicial decisions, with emphasis upon case law. Authority of the states; local school districts, powers and duties of district officers; legal status of parents and pupils; liability of school districts and officers; use of school property; school support and finance; the school program and Illinois school law.

479 *Financial Bases of Education* 3 sem. hrs.

Financial accounting and reporting, budgeting, unit costs, depreciation, insurance, school revenues, and other problems of school finance.

480 *School Plant Planning* 3 sem. hrs.

School sites, buildings, and equipment with emphasis on planning of building programs. Includes visitation of buildings.

481 *Administration and Organization of Schools* 3 sem. hrs.

School administration and organization, showing the relationship of national, state, and local education. Principles of administration and organization relating to the functioning of a school system are explored. Special attention is directed toward selection, retention, improvement of teachers, improvement and development of curriculum, use of records, interpreting the schools to the public, and other problems taken from the necessary experiences of public school administration.

482 Administration as a Science and an Art 3 sem. hrs.

Second course in a basic sequence of an administration core; sociological and psychological interpretations of administration, with emphasis upon human relations and leadership. Development of understandings, values, concepts through study of theory and its practical application in the educational setting. Decision making; administration and the behavioral sciences, theories of administration, power and authority, motivation and morale, organization and leadership, and research issues in education. Prerequisite: Education 481 and advanced graduate standing.

483 Educational Leadership 3 sem. hrs.

Designed to provide an understanding of the leadership function in formal and informal organizations. Includes study of executive behavior, contributions to administrative theory of non-educational fields; improvement of staff relations; human relations approach to the administrative process; policy development at all levels; evaluation of enterprises and programs; and research issues in education. Required of all doctoral candidates in school administration. Prerequisites: Education 481 and 482 and admission to doctoral program.

484 Superintendent and Central Staff 2 sem. hrs.

Development of knowledge, responsibilities, and competencies required of chief administrative officer, and in the case of larger districts, his central staff. Emphasizes district-wide policy making, curriculum development, improvement of instruction, effective leadership of personnel, community relations, and efficient operational procedures. Designed to develop a high degree of understanding and skill in the administration of a school district. Prerequisite: Advanced graduate standing.

485 The Principalship 2 sem. hrs.

Development of knowledge and competencies of the building principal as an instructional leader. Offered as a specialized course for those having a basic preparation in general administration.

486 Management of Educational Funds 2 sem. hrs.

Development of high competence and deeper concepts of school finance, with particular emphasis on the management phase. Includes management of all school funds, cash and accrual budgeting, financial accounting, financial statements and reports, safeguards, debt service, internal accounting, and management of special problems of finance. Prerequisite: Education 479.

489 Field Work in Educational Administration 3-4 sem. hrs.

Provides responsibilities and experiences in the study of administrative problems in school-community setting. Students will actually develop for a school system a survey or study of a significant problem. In addition to its clinical aspect, the student will emphasize intellectual and creative exploration of major educational issues, utilizing the total field of education and, where relevant, related disciplines. Prerequisite: Advanced standing and consent of instructor.

490 Research in Education Variable Credit

Research relating to research requirements for Specialist, Doctor of Philosophy, and Doctor of Education degrees. Approval of the Head of the Department of the program in which the student is enrolled is required. Maximum of 16 semester hours credit in research may be counted toward residency.

494 Research Seminar in Education 1 sem. hr.

For advanced graduate students in education who have taken basic courses in research. Research proposals and projects are critically evaluated. A student may enroll in the course as often as approved by his adviser. Prerequisites: Education 475, Education 434, or consent of instructor.

496 Seminar in Educational Administration 3 sem. hrs.

Designed for advanced graduate students in Educational Administration. Content will vary according to the needs of students and the emerging problems that need depth study. May be taken more than once providing the subject matter is not repeated. Prerequisite: Advanced graduate standing.

498 Internship 3-8 sem. hrs.

Opportunities to work with principals, superintendents, teachers, and lay groups in public school situations. Of special benefit to inexperienced students and for those preparing for administrative work in public schools. Assignments are made by the Dean of the Graduate School on recommendation of the student's academic adviser at least two months prior to beginning internship.

499 Independent Research for the Master's Thesis 1-6 sem. hrs.

A student electing the thesis option must take from four to six hours of 499. A proposal for research must be on file before registration for this course is approved by the student's adviser. While registration beyond six hours may be permitted for the convenience of the student, he may not count more than a total of six hours of 499 among the 32 required for the master's degree.

ELEMENTARY EDUCATION

TEACHING STAFF

Head of the Department: Helen M. Nance. Office. Moulton Hall 103

Professors: George Drew, William Frinsko, Ivo Greif, Helen Nance

Associate Professors: Leonard Brubaker, Lillian Davies, Ronald Laymon, Normand Madore

PROGRAMS OFFERED

At least 12 semester hours in Education are required, including Education 403, 475, and 476.

In the general Elementary Education curriculum, additional courses are selected following recommendations of the Head, Department of Elementary Education.

A student who wishes to specialize may do so in any one of the fields noted below. In this instance courses in addition to those required in Education are selected following recommendations of the academic adviser in the field of specialization: Biological Sciences, Geography, Health and Physical Education for Women, Literature and Language Arts, and Social Sciences.

Students interested in **Reading** in the elementary field should request the assignment of an adviser in this department by the Dean of the College of Education. (see requirements on page 49).

Students interested in **Supervision** in the elementary field may request the assignment of an adviser in this department by the Dean of the College of Education. (see requirements on page 49).

University requirements for the master's degree are listed on pages 19-23.

COURSES

307 Advanced Reading Methods 3 sem. hrs.

Practical problems utilizing group techniques in the teaching of reading in each grade level of the elementary school. Integrates reading with non-reading learning activities. Involves direct experiences with children. Prerequisite: Education 103.

331 Independent Study in Education 1-3 sem. hrs.

(See Education 331.)

333 The Junior High School 2 sem. hrs.

Function of the junior high school; characteristics and needs of early adolescents; articulation with the elementary and high schools; traditional and core curriculums; organization, administration, and evaluation of programs for early adolescents.

399 *Student Teaching* 1-10 sem. hrs.

(See Professional Laboratory Experiences 399.)

403 *Guided Learning in the Elementary School* 3 sem. hrs.

The role of the classroom teacher in effective learning practices in the changing elementary school. Organizing the school for effective living and learning; effective approaches to learning in the various curriculum areas in order to care for individual differences among children in the classroom.

430 *Workshop in Education* 2-6 sem. hrs.

(See Education 430.)

431 *Individualized Field Work in Education* 2 or 3 sem. hrs.

(See Education 431.)

476 *Curriculum Theory* 3 sem. hrs.

(See Education 476.)

497 *Professional Laboratory Experience* 3 sem. hrs.

(See Education 497.)

498 *Internship* 3-8 sem. hrs.

(See Education 498.)

499 *Independent Research for the Master's Thesis* 1-6 sem. hrs.

A student electing the thesis option must take from four to six hours of 499. A proposal for research must be on file before registration for this course is approved by the student's adviser. While registration beyond six hours may be permitted for the convenience of the student, he may not count more than a total of six hours of 499 among the 32 required for the master's degree.

PROFESSIONAL LABORATORY EXPERIENCES

TEACHING AND SUPERVISORY STAFF

Head of the Department: Cecilia J. Lauby. Office: Moulton Hall 217

Professor: Cecilia J. Lauby

Associate Professor: Quinn Hrudka

COURSES

399 *Student Teaching* 1-10 sem. hrs.

Directing the learning of pupils; participation in school and community activities; assuming full responsibility for a group of learners under the supervision of an expert teacher. Assignments are made on the basis of the student's area of specialization. High School Student Teaching assignments include work in special methods in the subjects taught. Prerequisite: 1. Education 216 for high school student teaching or one of Education 202, 203 or 204 for student teaching in the elementary school, junior high school, and special education. 2. Satisfactory preparation in the area of specialization. 3. Approval of the Director of Professional Laboratory Experiences. 4. One semester of residence, except in Special Education for which eight semester hours of residence work is required. Further information may be obtained from the office of the Director of Professional Laboratory Experiences.

431 *Individualized Field Work in Education* 2-3 sem. hrs.

(See Education 431.)

497 *Professional Laboratory Experience* 3 sem. hrs.

The role of professional laboratory experiences in teaching and learning. Significant trends, philosophies, and programs of teacher education. Personnel responsible for supervision of pre-service and in-service teachers and for directing observations, participation, and individual studies of pupils and teachers. For experienced teachers, supervisors of instruction, school administrators, and college teachers associated with teacher education programs.

SPECIAL EDUCATION

TEACHING STAFF

Head of the Department: Harold R. Phelps. *Office:* Fairchild Hall 103

Professors: Dean Hage, Harold R. Phelps, Mary Serra

Associate Professors: Robert M. Anderson, James W. Bommarito, Robert Hemenway, Harry A. Little

PROGRAMS OFFERED

Graduate work for the master's degree is offered in the following areas of specialization: Deaf and Hard of Hearing, The Maladjusted, Mentally Retarded, Visually Impaired, Physically Handicapped, and Speech Correction. Program requirements are as follows:

1. At least 12 semester hours in Education and Psychology are required, including Education 475 and Psychology 301.
2. Additional courses are selected following recommendations of the Head, Department of Special Education, with reference to areas of specialization.

Students interested in a program of **Clinical Reading** should request the assignment in this department by the Dean of the College of Education. (See requirements on page 49.)

COURSES

301 *Laboratory Reading Methods* 3 sem. hrs.

Techniques of diagnosis and instruction for special cases of severe reading disability. Deals with physical, mental, and emotional maladjustments and teaching errors which may become causal factors in reading disabilities. Provides opportunity for preparation of instructional materials and for laboratory work with children having serious reading difficulties. Three double periods per week. Prerequisite: Education 103.

331 *Independent Study in Education* 1-3 sem. hrs.

(See Education 331.)

345 *Special Classes for the Trainable* 3 sem. hrs.

Organization of educational programs for the trainable mentally retarded. Teaching methods, behavior and progress evaluation, reports, and home-school-community relations are considered. Opportunities for observation and participation with the trainable are provided.

346 *Education for the Mentally Retarded* 2 sem. hrs.

Study of objectives, curriculum content, units, methods, and organization of work in classes of mentally retarded children. Opportunities for participation and observation in classes for the educable retarded provided.

347 *Education of the Neurologically Impaired* 2 sem. hrs.

Medical diagnosis, psychological evaluation, anatomy and physiology of the central nervous system, nature and needs of the neurologically impaired child relative to educational adjustments needed and procedures of classroom management of children with severe learning problems and/or perceptual dysfunction. Relationship to other therapies. Observation and planned participation on a limited basis.

348 *Education of Gifted Children* 2 sem. hrs.

The meaning of giftedness, characteristics and methods of identification of gifted children, ways of providing for gifted in the school program, and guidance of gifted. For teachers, administrators, and personnel workers.

349 *Education of Physically Handicapped* 2 sem. hrs.

Types of educational settings; interpretation and preparation of records; educational planning and curriculum development; psychological problems; relationships with the home; vocational planning. For teachers of children with orthopedic handicaps and teachers of children with special health problems. Prerequisite: Applied Human Anatomy 381 or equivalent.

350 *Education of the Partially Seeing* 2 sem. hrs.

Nature and needs of the partially seeing. Interpretation and evaluation of medical, social, psychological and educational records and report. Types of educational programs. Methods and materials for partially seeing children of school age.

351 *Education of the Blind* 3 sem. hrs.

Nature and needs of the blind. Interpretation and evaluation of medical, social, psychological, and educational records and reports. Types of educational programs. Methods and materials for blind children of school age.

352 *Braille Reading and Writing I* 2 sem. hrs.

Designed to develop mastery of braille literary code. Use of the braille writer and other devices for writing. Proficiency in production of braille, ink printing and proofreading.

353 *Education of the Deaf* 2 sem. hrs.

History of education of deaf from social, economic, and political viewpoints. An overview of educational philosophies and methods. Consideration of psychological, social, and learning problems relating to the education of the deaf and hard of hearing. Problems of guidance and vocational placement peculiar to the deaf and hard of hearing.

354 *The Teaching of Speech to the Deaf* 4 sem. hrs.

The development of oral communication in hearing children compared to deaf children. Methods of developing speech in the pre-school and school age child using the visual, auditory, kinesthetic, and tactile approaches. Observations and participation in classes for the deaf. Prerequisite: Education 353.

355 *The Teaching of Language to the Deaf* 4 sem. hrs.

Principles and techniques of teaching language to pre-school and school age deaf child. Leading systems of teaching language to the deaf. Prerequisite: Education 353.

356 *Braille Reading and Writing II* 2 sem. hrs.

Designed to develop mastery of the braille mathematics code and the preparation of braille materials. Procedures for the use and teaching of braille. Prerequisite: Education 352.

357 *Practicum in Clinical Teaching* 3 sem. hrs.

Techniques in diagnosing learning disabilities in reading, arithmetic, spelling and handwriting as well as methods by which corrective measures can be applied. Laboratory experience with emotionally disturbed, socially maladjusted and learning disabled is provided. Laboratory hours arranged. (Enrollment limited.) Prerequisite: Permission of the instructor.

358 *Education of the Socially and Emotionally Disturbed* 2 sem. hrs.

Philosophies of teaching, curricular requirements, types of education facilities, teacher qualifications, methods and materials, identification and classification of disturbed children. Theories and methods of behavioral management. Prerequisite: Psychology 347.

359 *The Teaching of Reading and Elementary School Subjects to the Deaf* 4 sem. hrs.

Principles and methods of teaching reading to deaf children at all elementary school levels. Methods of teaching subjects such as arithmetic, social studies, and science, and the use of audio-visual aids in classes for the deaf. Prerequisite: Education 353.

399 *Student Teaching* 1-10 sem. hrs.

(See Professional Laboratory Experiences 399.)

401 *Analysis and Correction of Reading Disability* 3 sem. hrs.

Standardized and informal tests, analysis of test results, and differentiated reading programs based on test findings. Opportunities are provided for administering informal and standardized instruments designed to determine the extent of retardation and the type of reading disability. Practice is given in analyzing test findings and in recommending psychological and teaching procedures that will provide for the specific needs of subjects with reading difficulties. Prerequisite: Education 103 and 301 or teaching experience.

430 *Workshop in Education* 2-6 sem. hrs.

(See Education 430.)

431 *Individualized Field Work in Education* 2 or 3 sem. hrs.

(See Education 431.)

445 *Curriculum Development for the Mentally Retarded* 3 sem. hrs.

Designed to aid students in the development of curriculum and methods suited to their particular problems with the mentally retarded. For principals, supervisors, and teachers now engaged in the field, or those having a background in psychology and mental retardation contemplating the field. Attention is given to organization and curriculum at elementary and secondary levels. Methods and materials adapted to age groupings; pupil guidance and evaluation; study of job outlets and work try-outs or other subjects of student's choice.

446 *Seminar in Special Education and Rehabilitation* 2 sem. hrs.

Advanced study for graduate students interested in exploring various problems in the areas of special education and rehabilitation. Opportunities will be given to develop program models or research designs relating to the education and training of the handicapped. A student may repeat the seminar if different material is covered. Prerequisite: Permission of instructor.

447 *Coordinating Educational Programs for Exceptional Children*
2 sem. hrs.

Principles and problems involved in the administration of educational programs for exceptional children.

**448 Instructional Procedures for Emotionally Disturbed
Pupils 3 sem. hrs.**

Organizing and administering laboratory procedures for maladjusted and educationally retarded pupils. Emphasis on reading abilities. Selection and use of learning materials. Research pertaining to personality factors as related to school success. Supervised laboratory work with children. Prerequisites or concurrent registration: Education 103 and 301.

498 Internship 3-8 sem. hrs.

(See Education 498.)

499 Independent Research for the Master's Thesis 1-6 sem. hrs.

A student electing the thesis option must take from four to six hours of 499. A proposal for research must be on file before registration for this course is approved by the student's adviser. While registration beyond six hours may be permitted for the convenience of the student, he may not count more than a total of six hours of 499 among the 32 required for the master's degree.

ENGLISH

TEACHING STAFF

Acting Head of the Department: Stanley B. Shuman

Office: Schroeder Hall 334

Professors: Ferman Bishop, George Canning, Howard I. Fielding, Victor E. Gimmestad, Ruth Henline, John S. Hill, Milford C. Jochums, Christopher Spencer, Dale B. Vetter

Associate Professors: Richard E. Allen, Ralph Bellas, Pauline S. Drawver, Robert L. Duncan, John M. Heissler, Wayne Huebner, William R. Linnehan, Carroll V. Peterson, Taimi M. Ranta, Conrad B. Suits, Robert D. Sutherland

Assistant Professor: Carroll B. Cox

The Department of English offers work leading to the master's degree in two areas: the Liberal Arts and Sciences area, and the teaching area.

In the Liberal Arts and Sciences area, the student must, except by special arrangement with the head of the Department of English, complete thirty-two hours of class work in English. He may not apply courses that are peculiar to institutes and similar programs or the following courses toward the degree: 370, 372, 275, 290, 295, 491, 493. He may work towards a Master of Arts degree or a Master of Science degree by fulfilling the Special Degree requirements specified in this catalog.

In the teaching area, the student may elect to fulfill the requirements of either the College Teaching Program or the Secondary Teaching Program. He must complete twenty-six hours in English and six hours in education or psychology as specified in the Program which he chooses. He may work toward a Master of Arts degree, a Master of Science degree, or a Master of Science in Education degree by meeting the Special Degree requirements specified in this catalog.

The following comments are applicable to both areas. French and German are the preferable languages for the student in English who wishes to take, or to proceed beyond, a Master of Arts degree. The candidate for the master's degree must show credit for English 310 at the undergraduate or graduate level and for English 497, the latter of which should be taken early in the

graduate program. A student may choose one of two methods of completing his work toward the master's degree: he may complete thirty-two hours of course work and write a comprehensive examination followed by an oral examination; or he may complete twenty-eight hours of course work and write a thesis followed by an oral examination.

A student should normally elect courses which provide concentration in the literature areas. A student in the Secondary Teaching Program may choose to concentrate in children's literature or professional studies, but he must take at least six hours in literatures of England or America.

A student may take courses designated "Studies" more than once provided he does not duplicate the subtitle.

An M.A. candidate may offer no more than six hours of course work from Related Courses.

COURSES

310 *History and Development of the English Language* 3 sem. hrs.
Historical approach to the development of the English language, to help student and prospective teacher discover reasons behind the meanings, spelling syntax, and usage of contemporary English.

311 *Old English* 3 sem. hrs.

The elements of Old English grammar, with selected readings.

317 *Philosophical and Critical Prose of the Victorian Period*
3 sem. hrs.

Chief prose writers of the century and their contributions to the thought of the present time.

325 *English Drama Before 1642* 3 sem. hrs.

English Drama from its beginnings in the Medieval Church to the closing of the theatres with special emphasis upon the plays of Marlowe and Johnson.

327 *Restoration and Eighteenth Century English Drama* 3 sem. hrs.
English Drama from the Restoration in 1660 through Sheridan.

328 *Modern British and American Drama* 3 sem. hrs.

Readings in twentieth-century British and American Plays and related critical documents.

332 *Studies in American Literature* 3 sem. hrs.

Concentrated coverage of one or more important literary figures. Prerequisite: English 130.

382 *Literary Criticism* 3 sem. hrs.

Survey of critical and esthetic theory designed to aid the student in evaluating ancient and modern literature.

386 *The Eighteenth-Century English Novel* 3 sem. hrs.

The English novel from its English origin through the eighteenth century. Prerequisite: English 110.

387 *The Nineteenth-Century English Novel* 3 sem. hrs.

The English novel from Mathew Lewis through Thomas Hardy.

388 *The Twentieth-Century English Novel* 3 sem. hrs.

The twentieth-century English novel from Arnold Bennett through Lawrence Durrell.

416 *Studies in Eighteenth-Century English Literature* 3 sem. hrs.

The development of present-day social and political ideas as portrayed in the writings of the eighteenth century with special emphasis upon the works of Dryden, Pope, Swift, Johnson and Goldsmith.

418 *Studies in Nineteenth-Century English Poetry* 3 sem. hrs.
Representative poets of nineteenth-century England such as Wordsworth, Keats, Browning, and Arnold.

420 *Studies in Chaucer* 3 sem. hrs.
Study and research in the life works of Geoffrey Chaucer.

422 *Studies in Shakespeare* 3 sem. hrs.
An approach to Shakespeare through sources, textual problems, criticism, and modern scholarship.

424 *Studies in Milton* 3 sem. hrs.
Study and research in the life and works of John Milton.

434 *Studies in Contemporary American Literature* 3 sem. hrs.
Wide reading in the works of Faulkner, T. S. Eliot, and other recent American authors.

450 *Studies in Ancient Literature* 3 sem. hrs.
Selected readings from antiquity, both from the Eastern and Western worlds.
Prerequisite: English 150 or consent of the head of the department.

452 *Studies in the Renaissance* 3 sem. hrs.
Consideration of the Renaissance and its major authors.

453 *Studies in the Enlightenment* 3 sem. hrs.
Consideration of The Enlightenment, chiefly in France from 1650 to 1750.

454 *Studies in European Romanticism* 3 sem. hrs.
Consideration of the Romantic movement and its major authors.

456 *Studies in Modern World Literature* 3 sem. hrs.
A study in depth of the fiction and drama after World War I from all parts of the world other than the United States.

487 *Studies in the American Novel* 3 sem. hrs.
The novel in the United States with emphasis on the nineteenth and twentieth centuries.

493 *Topics in English* 1-3 sem. hrs.
An intensive course covering one or more aspects of English. A student may enroll in this course for credit more than once, provided the subject matter covered is not duplicated.

497 *Research Seminar* 2 sem. hrs.
Introduction to bibliography, methods of scholarly research and the critical evaluation of research in the field.

498 *Independent Reading* 1-3 sem. hrs.
Available only by permission of the head of the department to those students who would profit more from directed reading than from an existing course.

499 *Independent Research for the Master's Thesis* 1-6 sem. hrs.
A student electing the thesis option must take from four to six hours of 499. A proposal for research must be on file before registration for this course is approved by the student's adviser. While registration beyond six hours may be permitted for the convenience of the student, he may not count more than a total of six hours of 499 among the 32 required for the master's degree.

RELATED COURSES

306 *Regional and Area Studies* 1-9 sem. hrs.

An intensive study of particular lands, environments, cultures, literatures, and peoples. May be given in cooperation with other departments, on or off campus. The areas to be studied, participating departments, and credit hours available in the several departments will be announced each time the course is offered.

348 *Playwriting* 3 sem. hrs.

Playwriting techniques of selected masters of dramaturgy, with practical application of the techniques in the writing of original plays. Both literary and professional aspects of writing for the theatre are considered. When possible, opportunity will be provided for the laboratory production of original scripts of quality in University theatre-workshop projects.

370 *Studies in the History of Literature for Young People*

3 sem. hrs.

Advanced critical, chronological study of literature for children and young people to 1900.

372 *Studies in Contemporary Literature for Young People*

3 sem. hrs.

Advanced study in contemporary literature for children and young people.

375 *Studies in Literature for Adolescents* 3 sem. hrs.

Advanced study of literature for grades seven through twelve.

390 *Recent Research in the Teaching of the Language Arts*

2 sem. hrs.

Critical study of current practice and research in the teaching of the language arts in the elementary school.

395 *Problems in the Teaching of English* 2 sem. hrs.

Critical examination of current practice and research in the teaching of language, literature, and composition in the junior high school and the senior high school in order to aid the teacher in meeting individual problems.

491 *Internship-Seminar in College Teaching of English* 3 sem. hrs.

Credit for the course is given in Education (see Education 491).

FOREIGN LANGUAGES

TEACHING STAFF

Head of the Department: Thomas E. Comfort *Office:* Stevenson Hall 424

Professors: Allie Ward Bilingsley, Thomas E. Comfort, Brigitta J. Kuhn, Joseph L. Laurenti, Henry R. Manahan, Patrick Tarrant

Associate Professors: A. Gordon Ferguson, William D. Fuehrer, Vytas V. Gaigalas, Kelvin M. Parker, Ralph M. Perry, Jose A. Rodriguez

The Department of Foreign Languages reserves the right to examine transfer students as to their ability to carry courses on the 300 level.

The department offers work leading to the following degrees: M.A., M.S. in Ed. The master's degree program is flexible, permitting specialization in either French, Latin, or Spanish. Courses are approved by major adviser and Head of the Department of Foreign Languages. A thesis may be required at the discretion of the head of the department.

GENERAL COURSES

300 Research in Foreign Languages 1-3 sem. hrs.

Supervised work in a foreign language, in comparative language studies, or in educational materials for a foreign language laboratory. Assignments will depend on the preparation and interest of the student. By arrangement with the Head of the Department of Foreign Languages.

423 Romance Linguistics 3 sem. hrs.

Comparative diachronic analyses of the structure of the Romance languages with particular attention to French, Italian, Portuguese and Spanish. The development of the phonological, morphological and syntactical systems of the Romance languages from the earliest known records to the present with illustrative readings in the various languages.

491 Internship-Seminar in College Teaching in the Foreign Languages 1-3 sem. hrs.

Credit for this course is given in Education (see Education 491).

497 Research Seminar 1-6 sem. hrs.

Introduction to bibliography, methods of scholarly research and the critical evaluation of research in the field. Must be taken by first year graduate students unless the department requires Education 475. May be repeated by more advanced students who desire direction and constructive criticism as they pursue research problems.

499 Independent Research for the Master's Thesis 1-6 sem. hrs.

A student electing the thesis option must take from four to six hours of 499. A proposal for research must be on file before registration for this course is approved by the student's adviser. While registration beyond six hours may be permitted for the convenience of the student, he may not count more than a total of six hours of 499 among the 32 required for the master's degree.

FRENCH

301 French Romanticism 3 sem. hrs.

Reading of poetry, novels, plays, criticism, stories, and history. Class conducted in French. Prerequisite: French 221, 222.

302 French Classicism 3 sem. hrs.

Reading of plays by Corneille, Racine, and Moliere, and of selections from other seventeenth century writers. Class conducted in French. Prerequisite: French 221, 222.

309 French Phonetics 2 sem. hrs.

A scientific approach to French pronunciation. Correct formation of French sounds; practical application of the theory of phonetics to teaching. Practice in the diction of ordinary conversation as well as the more formal diction of public reading and speaking. Prerequisite: Two courses in French literature.

316 French Literature of the Sixteenth Century 3 sem. hrs.

An analysis of the Renaissance as it expressed itself in the leading writers of France in the 16th century. Prerequisite: Two courses in French literature.

318 Moliere 3 sem. hrs.

Major comedies of Moliere, together with some of the farces and comedies.

332 French Lyric Poetry 2 sem. hrs.

Reading of French lyrics from the 16th century to the present; study of the schools of poetry; explication de texte; oral reading. Prerequisite: Two courses in French literature.

401 *Readings in Contemporary French Literature* 3 sem. hrs.
Trends in contemporary prose, with readings from the novel and the drama.

402 *Stylistics* 3 sem. hrs.

Intensive, advanced grammar and composition, including analysis of style.

403 *Twentieth Century Authors Since 1945* 3 sem. hrs.

A study in depth of the fiction, drama, and poetry in French literature since World War II.

404 *Balzac* 3 sem. hrs.

Balzac's work with emphasis on his novels as a mirror of his time, and their influence on the development of the novel as a literary form.

416 *Montaigne* 3 sem. hrs.

A detailed study of the life and works of Montaigne.

418 *La Fontaine* 3 sem. hrs.

A detailed study of the life and works of La Fontaine.

420 *The Age of Enlightenment* 3 sem. hrs.

Intensive and critical study in French of the major authors and works of the eighteenth century.

421 *History of French Language* 3 sem. hrs.

Evolution of the language from its origins to the present day.

430 *Realism and Naturalism* 3 sem. hrs.

A detailed analysis of French literature of the late nineteenth century, including the works of Flaubert, Zola, and Baudelaire.

431 *Le Symbolisme et le Parnasse* 3 sem. hrs.

A detailed study of French poetry in the late nineteenth century.

GERMAN

302 and 303 *Goethe and Schiller* Each 3 sem. hrs.

Classic German literature with emphasis on dramas of Goethe and Schiller. Lectures, collateral reading, and reports. Prerequisite: Two courses in German beyond 116.

309 *German Phonetics* 2 sem. hrs.

A scientific approach to German pronunciation; correct formation of German sounds; practical application of the theory of phonetics to its teaching. Prerequisite: Two courses in German literature.

313 *Advanced German Composition and Conversation* 2 sem. hrs.

Free discussion of topics of contemporary interest; assignment of oral and written themes based on class discussions. Prerequisite: German 213 or equivalent.

318 *Goethe's Faust* 3 sem. hrs.

A critical study of Parts I and II of *Faust* as literature and as an expression of Goethe's philosophy. Lectures, assigned readings, and reports. Prerequisite: Two courses in German beyond 116.

GREEK

301 and 302 *Classical Greek* Each 3 sem. hrs.

The Greek alphabet, pronunciation, essentials of grammar, translation of reading material of graded difficulty, exercises in writing Classical Greek, consideration of the Greek element in English. Prerequisite for a master's degree in Latin.

LATIN

315 *Horace: Odes and Epodes* 3 sem. hrs.

Translation, interpretation, and metrical reading of Horace's lyric poetry. Critical study of the characteristic features of his style. Life in the Augustan Age and Horace's philosophy.

316 *Roman Satire* 3 sem. hrs.

The history and development of satire as a literary genre; reading of representative selections from Ennius, Lucilius, Horace, Persius, and Juvenal; a consideration of their influence upon later literature.

318 *Tacitus* 2 sem. hrs.

Agricola and *Germania*. An introduction to the prose of the Silver period.

319 *Selections from the Letters of Cicero* 2 sem. hrs.

Translation of some of the most interesting and important letters of Cicero as a commentary upon the manners, history, and politics of the period of the Republic.

320 *Selections from the Letters of Pliny* 2 sem. hrs.

Readings from the correspondence of Pliny selected for their importance as a commentary on Roman life and manners during the period of the Empire. Study of the letters both as human documents and as literary compositions.

401 *Suetonius' Lives of the Caesars* 2 sem. hrs.

Translation of the biographies of some of the most important of the Caesars and a study of the place of the Caesars in history. Designed to give the teacher of Latin a good historical background.

402 *Lucretius* 3 sem. hrs.

Reading of selected portions of the *De Rerum Natura*. Study of ancient philosophy with special emphasis on Stoicism and Epicureanism.

403 *The Annals of Tacitus* 3 sem. hrs.

Translation of selections from the *Annals* covering the events of the early Empire. Critical study of Tacitus as an historian.

404-405 *History of Latin Literature* Each 3 sem. hrs.

Development of Latin literature from its beginning to the close of the Republic. Works of the writers of the Empire period. Translation of representative selections.

406 *The Elegiac Poets* 2 sem. hrs.

Readings from the Roman elegiac poets; the influence of these poets upon English and American literature.

407 *Cicero's Orations* 3 sem. hrs.

Translation and interpretation of representative works drawn from the forensic orations of Cicero, with particular attention to the details of the life of Cicero and the history and politics of the last century of the Roman Republic.

410 *Advanced Latin Prose Composition* 3 sem. hrs.

Application of the major principles of Latin grammar and syntax in writing connected discourse based on different Latin authors as a means of developing facility in the use of Latin forms and constructions.

415 *Vergil's Georgics and Eclogues* 2 sem. hrs.

Reading of the Georgics and Eclogues of Vergil; the style of Latin pastoral and didactic poetry.

421 *History of the Latin Language* 2 sem. hrs.

Development of the Latin language with attention directed to the grammatical forms and syntactical usage in selected writings of the early, classical, and post-classical authors. Some treatment of the relation of the various Indo-European languages to each other, the place of Latin and English among these languages, and the history of Latin elements in English.

424 *Problems in the Teaching of Latin* 2 sem. hrs.

Aims, subject matter, and methods of the teaching of Latin in the light of new emphasis in the high school curriculum. Critical examination of current high school texts, preparation of syllabi and tests, and a study of audio-visual materials available for Latin classes.

SPANISH

304 *La civilización mexicana* (Spanish) 2 sem. hrs.

A study of the formation of the Mexican nationality of today, as the fusion of Hispanic and Indian cultures. A consideration of the development of attitudes, traditions, and way of life of the Mexican people.

309 *Spanish Phonetics* 2 sem. hrs.

An analysis of the speech sounds of Spanish; a consideration of the difficulties an English speaker encounters in learning and using correct Spanish pronunciation, stress, and intonation; exercises aimed at improvement of pronunciation and intonation.

310 *Sintaxis española* 2 sem. hrs.

A descriptive study of modern Spanish with frequent reference to psychological and historical forces that have influenced its present form.

320 *Problems in the Teaching of Spanish* 2 sem. hrs.

Re-evaluation of traditional methods of teaching Spanish. Examination and evaluation of modern techniques. Problems related to the teaching of Spanish in general. Problems related to specific methods and techniques.

331 *Spanish American Literature* 3 sem. hrs.

History of Spanish American literature from the colonial period to the late 19th century. A consideration of the development of literary forms and traditions. Prerequisite: Spanish 116 or consent of the instructor.

332 *Spanish American Literature* 3 sem. hrs.

History of Spanish American literature from late 19th century to present day. A continuation of Spanish 331. Prerequisite: Spanish 116 or consent of the instruction.

335 *Mexican Literature (Spanish)* 2 sem. hrs.

An intensive survey of Mexican literature and its cultural background from the period of the conquistadors to the present.

372 *Spanish Drama of the Siglo de Oro* 3 sem. hrs.

Class and collateral reading of selected plays from the great dramatists of Spain's Golden Age. Prerequisite: Two courses in Spanish literature.

411 *Spanish-American Novel* 4 sem. hrs.

The Spanish-American novel of the nineteenth and twentieth centuries with emphasis on the most characteristic author of each period and each genre.

421 *History of the Spanish Language* 4 sem. hrs.

History of the Spanish language with attention to both external and internal aspects of its development.

435 *Leaders in Spanish-American Thought* 4 sem. hrs.

The writers of prose—exclusive of fiction—who have shaped or influenced thought and action in Spanish America during the past two centuries, from the beginning of the movement for independence to the present day.

463 *Seminar in Spanish Literature Before 1500* 3 sem. hrs.

Intensive and critical study of a major work of the period. The work studied will be varied in successive semesters.

464 *Seminar in Golden Age Prose* 3 sem. hrs.

The seminar in prose will consider the important works of the Renaissance and Baroque periods, comprising the novel in its various forms as well as the short story, religious literature, moral and historical writings. The seminar in poetry will study the development of Spanish poetry from Garcilaso to Quevedo, with particular attention to Italian influences, mysticism, the aesthetics of the Renaissance and Baroque, and the traditional forms.

466 *The Picaresque Novel* 3 sem. hrs.

A study of the Picaresque Novel and its influence on modern world literature. Emphasis on *Lazarillo de Tormes*, *Guzman de Alfarache*, *La vida de Marcos de Obregon*, *La vida del Buscon*, *Vide y hecho de Estebanillo Gonzales*.

467 *Seminar in Golden Age Poetry* 3 sem. hrs.

The seminar in poetry will study the development of Spanish poetry from Garcilaso to Quevedo, with particular attention to Italian influences, mysticism, the aesthetics of the Renaissance and Baroque, and the traditional forms.

468 *Lope de Vega and His Predecessors* 3 sem. hrs.

A study of the creation of national theatre by Lope de Vega and his predecessors, with attention to the development of preceding forms of religious and secular drama, Italian influences, and the crystallization of the spirit of the Spanish Counter-Reformation. Prerequisite: Spanish Drama of the Siglo de Oro 332.

469 *The Theatre of Calderon and His Contemporaries* 3 sem. hrs.

Emphasis will be placed both on Calderon's late dramas and upon a critical analysis of the drama of his contemporaries. Questions to be considered: national characteristics, intellectual and religious implication, the role of the individual, problems of style and ideological interpretation. Prerequisite: Spanish Drama of the Siglo de Oro 332.

470 *Don Quixote* 3 sem. hrs.

Reading of the Quixote with special attention to problems of interpretation and literary criticism.

484 *Seminar in Contemporary Spanish Literature* 3 sem. hrs.

A study of the twentieth century novel, essay, poetry or drama.

FRENCH

(See Foreign Languages)

GEOGRAPHY

TEACHING STAFF

Head of the Department: John Trotter *Office:* Schroeder Hall 125

Professors: Paul J. Brand, Kermit M. Laidig, James E. Patterson, Stanley B. Shuman, John E. Trotter

Associate Professors: James D. Carl, Richard R. Hart, Paul F. Mattingly, E. Joan Miller, Elsa A. Schmidt, Thomas K. Searight, David L. Wheeler

The department offers work leading to the following degrees: M.S., M.S. in Ed. University requirements for master's degrees are described on pages 19-23.

COURSES

300 *Cartography and Graphics* 3 sem. hrs.

Graphic representation of statistical data, including compilation and preparation of various types of maps and graphs. Map projections, scales, symbolisms, dot maps, and their use.

305 *Aerial Photograph Interpretation* 3 sem. hrs.

An introduction to the basic principles of photogrammetry and the techniques and applications of aerial photograph interpretation, emphasizing the functional relationships of features located upon the earth's surface.

306 *Regional and Area Studies* 1-9 sem. hrs.

An intensive study of particular lands, environments, cultures, and peoples. May be given in cooperation with other departments, on or off the campus. The areas to be studied, participating departments, and credit hours available in the several departments, will be announced each time the course is offered.

308 *Quantitative Methods in Geography* 3 sem. hrs.

Use and interpretation of basic statistical techniques in geographical problems. Measures of central tendency and dispersion, frequency curves, sampling, sample analysis, and correlation are applied to the spatial aspects of phenomena.

310 *Techniques of Field Work* 3 sem. hrs.

Techniques of mapping and interpretation of the phenomena of the natural and cultural landscapes. Most of the time in the field is spent in doing original study and mapping.

315 *Methods and Concepts in American Geography* 2 sem. hrs.

A survey of selected professional publications designed to acquaint the student with the development of basic concepts and methods in American geography. Enables the student to evaluate geographic viewpoints and approaches in research and teaching.

320 *Rural Land Use and Agricultural Geography* 3 sem. hrs.

Principles of agricultural geography, and related land use; types of agriculture and production units, agricultural regions, and distributional patterns of chief crops and livestock. Includes study of factors and decisions influencing the location of agricultural activities. Prerequisites: Economic Geography 130 or consent of instructor.

325 *World Population and Resources* 3 sem. hrs.

Population growth and resource distribution and their impact on national policy, levels of living, education, and food supply.

330 *Geography of Transportation* 3 sem. hrs.

The study of the spatial aspects of transportation systems: land, air, and water; the agents of transportation, and the effects of transportation on regional and economic development. Transportation realms and regions of the world. Prerequisites: Economic Geography 130 or consent of the instructor.

335 *Industrial Geography* 3 sem. hrs.

Distribution and locational factors influencing distribution of American industries. Relationship of American industries to world industrial patterns.

340 *Climates of the Continents* 2 sem. hrs.

Climates of the various continents and associated controls. Analysis of classifications of climate and problems of climatic classifications.

345 *Problems in Conservation* 3 sem. hrs.

Investigations of specific problems in conservation of soils, water, forests, wildlife, minerals, and recreational land. These problems are explored in their complex national, regional, and local contexts.

365 *Geographic Materials in Education* 3 sem. hrs.

The role of maps, globes, and other aids in teaching geography. Practical experience in selection and organization of geographic materials under laboratory situations.

375 *Economic Geology* 3 sem. hrs.

Earth materials of economic importance. Characteristics and uses of common metallic and nonmetallic minerals and rocks. Prerequisite: Geography 175.

380 *Geomorphology* 3 sem. hrs.

Detailed study of the origin, classification, description, and interpretation of land forms. Prerequisite: Physical Geology 175.

385 *Invertebrate Paleontology* 4 sem. hrs.

Concepts of evolution, taxonomy, and paleontological species; invertebrate phyla, with emphasis on groups with paleocologic and stratigraphic significance. Three hours of lecture, three hours of laboratory. Prerequisite: Historical Geology 180 or Life of the Geologic Past 275 and Biological Sciences 191.

400 *Advanced Cartography* 3 sem. hrs.

Techniques of cartographic presentation. Compilation and construction of maps and diagrams for research and teaching. Prerequisites: Cartography and Graphics 300.

405 *Geography in Education* 2 sem. hrs.

Historical development of the science and teaching of geography. Modern geography and its contribution to general education. Evaluation of current teaching materials.

410 *Geography of Discovery and Exploration* 2 sem. hrs.

Contributions made by discovery and exploration to the geographical knowledge of the world from ancient to early modern times.

412 *Cultural Geography* 3 sem. hrs.

The forms and processes of man's occupancy and use of his habitat within cultural regions, which may be areally defined and studied through time. Examples from North America and Western Europe are presented in depth, along with an examination of cultural origins, cultural dispersals and cultural landscapes.

415 *Advanced Urban Geography* 3 sem. hrs.

Detailed analysis of the spatial aspects of urban developments. Focus on urban morphology, and external relationships.

420 *Physiography of North America* 3 sem. hrs.

Physiographic regions of North America. Emphasis placed upon the development of surface features of each area as a background for present geographic patterns of that region. One two-day field trip is required.

425 *Glaciology and Pleistocene History* 3 sem. hrs.

The formation, movement, work, and landforms resulting from glaciers. Analysis of the effects of the Pleistocene Epoch on climates, vegetation, weathering, soils, and landscape development. Prerequisites: Physical Geology 175.

430 *Geography of Latin America* 3 sem. hrs.

Intensive study of selected areas with emphasis upon settlement patterns, resources and interregional relations.

435 *Geography of Western Europe* 3 sem. hrs.

A regional and economic development of the British Isles and continental Europe. Intensive investigations of resource, industrial, agricultural, and population patterns of Europe. Illustrated local units of occupancy.

440 *Mediterranean Lands* 3 sem. hrs.

Regional survey of the physical, cultural, and economic aspects of southern Europe, the Levant, and North Africa.

445 *Geography of the Middle East* 3 sem. hrs.

Survey of the lands and peoples of southern and southwestern Asia. Resource and population patterns of regional and political units.

450 *Geography of the Far East* 3 sem. hrs.

Lands and peoples of eastern Asia, with emphasis on China and Japan. International, national, and regional characteristics and problems.

460 *Seminar in Regional Geography* 3 sem. hrs.

Prerequisite: Advanced standing in geography or consent of instructor.

465 *Seminar in Economic-Resource Geography* 3 sem. hrs.

Prerequisites: Economic Geography 130 and/or Conservation of Natural Resources 205, or consent of instructor.

470 *Seminar in Physical Geography*

Prerequisite: Consent of instructor.

475 *Seminar in Human Geography*

Prerequisite: Consent of instructor.

491 *Internship-Seminar in College Teaching in Geography*
3 sem. hrs.

Credit for this course is given in Education (see Education 491).

497 *Research Seminar* 1-6 sem. hrs.

Introduction to bibliography, methods of scholarly research and the critical evaluation of research in the field. Must be taken by first year graduate students unless the department requires Education 475. May be repeated by more advanced students who desire direction and constructive criticism as they pursue research problems.

499 *Independent Research for the Master's Thesis* 1-6 sem. hrs.

A student electing the thesis option must take from four to six hours of 499. A proposal for research must be on file before registration for this course is approved by the student's adviser. While registration beyond six hours may be permitted for the convenience of the student, he may not count more than a total of six hours of 499 among the 32 required for the master's degree.

GERMAN

(See Foreign Languages)

GREEK

(See Foreign Languages)

HEALTH AND PHYSICAL EDUCATION

TEACHING STAFF (MEN)

Head of the Department: Arley F. Gillett. *Office:* Horton Field House 203-A.
Professors: James E. Collie, Arley F. Gillett, Eugene L. Hill, Burton L. O'Conor

Associate Professors: Paul Dohrmann, Robert N. Singer, Wayne O. Truex, Milton E. Weisbecker

Assistant Professors: Buford H. Bass, Lawrence E. Bitcon

TEACHING STAFF (WOMEN)

Head of the Department: Phebe M. Scott. *Office:* McCormick Gymnasium 101

Professors: Bernice G. Frcy, Miriam Gray, Barbara C. Hall, Margaret L. Jones, Ellen D. Kelly, Phebe M. Scott, Gwen Smith

Associate Professors: Virginia R. Crafts, Betty Keough

Assistant Professors: G. Laurene Mabry, Donna Jo Workman.

The Department offers work leading to the following degrees: M.A., M.S., M.S. in Ed.

Students working on a master's degree must complete at least 18 hours in Health and Physical Education excluding thesis credit. Programs must also include from this department 442 and 497. Students pursuing the non-thesis comprehensive examination option must include in their programs at least two semester hours of credit from 499. Students who desire a concentration in dance will complete 460, 469, and 497; 10 more semester hours in dance or other physical education courses for a total of 18 semester hours; and write a thesis which may be a creative project or a statistical study.

University requirements for master's degrees are listed on pages 19-23.

COURSES

304 *Teaching of Sports* 2 sem. hrs.

Application of psychological and sociological principles to the teaching of selected activities; coaching techniques for advanced players; review of recent research in methods and materials in specific activities.

321 *The Elementary School Physical Education Program* 2 sem. hrs.

Principles and purposes of physical education in elementary schools. Current trends in program planning, recent research, methods of evaluation, school-community cooperation. Prerequisite: Health and Physical Education 221, 222 or 223.

340 *History of Physical Education* 2 sem. hrs.

The relationship, from ancient to modern times, between physical education and factors in society: economic, political, social, educational, and religious.

341 *Organization and Administration of Health and Physical Education* 3 sem. hrs.

Factors essential to the administration and program development of physical education in elementary and secondary schools.

347 *Tests and Measurements in Physical Education* 3 sem. hrs.

Analysis of motor performance, using objective tests, subjective ratings, and achievement tests. Construction and evaluation of knowledge tests. Use of basic statistical concepts for interpreting test scores.

349 *Applied Motor Learning* 3 sem. hrs.

Presents research and theory of learning, performance, and related factors as applied to gross motor skills. Intended for teachers, coaches, and those concerned with human performance in motor activity.

360 *The Teaching of Dance* 2 sem. hrs.

Teaching methods in modern, folk, square, round, and social dance; selection, progression, and grade placement of dance materials in the secondary school and college curriculum; practice in perfecting dance techniques; evaluation of dance skills and knowledges. Prerequisite: Health and Physical Education 160.

361 *History of Dance I* 2 sem. hrs.

The history and development of dance as a social and cultural medium from primitive times through the nineteenth century.

362 *Principles of Performance* 3 sem. hrs.

Principles governing public performance in physical education; dance, swimming, gymnastics, and other physical education activities. A survey of costuming, lighting, accompaniment, and related problems in production.

363 *History of Dance II* 2 sem. hrs.

Dance trends in the twentieth century; their relationships to older cultures and forms of dance and to social patterns of the present; approaches, styles, and contributions of leading dance personalities of the twentieth century. Prerequisite: Health and Physical Education 361.

364 *Musical Analysis for Dance Accompaniment* 2 sem. hrs.

Basic principles of accompanying modern dance; selection of appropriate music, both live and recorded, from traditional and current repertoires, for use with folk, social, and theatre forms of dance; brief history of music and music for dance.

365 *Teaching of the Folk Forms of Dance* 2 sem. hrs.

Methods of teaching the folk and social forms of dance in the secondary school, college, and recreational situation; appraisal of the patterned dances in the traditional and current repertory; sources of curricular materials from dance books, magazines, workshops, clinics, festivals, conventions, institutes, and summer schools and camps; advanced techniques in folk, round, square, and social dance; basic skills in tap dance. Prerequisite: Health and Physical Education 360.

367 *Problems in Dance* 2 sem. hrs.

Current problems in the teaching of dance on all levels, in the administration of dance curricula, in the organization and supervision of dance clubs and extra-curricular activities.

368 *Practicum in Composition* 2 sem. hrs.

Progressive experiences in individual and group composition: in design, rhythm, and dynamics; compositional group works based upon extensive investigation into the subject matter to be communicated. Prerequisite: previous experience in modern dance.

369 *Dance for Children* 2 sem. hrs.

Methods and materials in traditional and creative activities; movement explorations for stunts, tumbling, and games; interrelationships of dance with art, music, drama, science, and other elementary school activities. Prerequisite: Health and Physical Education 162 or 222.

372 Camp Experience with Physically Handicapped 3 sem. hrs.

Actual experience as a counselor in a summer camp for physically handicapped children. Conferences and discussions on planning the child's day; general organization of activities, camp equipment, and program. A student may enroll for credit a second time. Prerequisite: Approval of the Director of the Division of Special Education and Head of the Department of Health and Physical Education for Men or Women.

373 Workshop in Recreation and Camping 3 sem. hrs.

Preparation of materials for use in recreation and camping situations; sources for obtaining materials and information; cooperative work among various departments and organizations. Includes crafts, music, story telling and dramatics.

383 Body Mechanics and Corrective Procedures 2 sem. hrs.

Methods, materials, and activities appropriate for the body mechanics and adapted physical education program in elementary and secondary schools. Prerequisite: Health and Physical Education 282.

384 Diagnosis and Treatment of Athletic Injuries 2 sem. hrs.

Designed to familiarize the coach with symptoms of common athletic injuries, their immediate treatment and care. Prerequisite: Health and Physical Education 182.

385 Physical Defects—Survey and Rehabilitation 3 sem. hrs.

Physical defects of handicapped children and procedures used in their rehabilitation. For those preparing to teach special classes of physically handicapped children. Includes special services, equipment, and procedures used in school programs. Lecture and Laboratory. Also offered as Biological Sciences 385. Prerequisite: Health and Physical Education 282.

386 Physical Education and Recreation for Handicapped Children 2 sem. hrs.

Materials and methods involved in planning recreational programs for handicapped children and adolescents. Designed primarily for teachers of exceptional children and physical education. Prerequisite: Health and Physical Education 383 or Psychology 346 and 2-3 hrs. from Health and Physical Education 221, 222, 223, 224, or 321.

403 Problems in Administration of Sports 3 sem. hrs.

Critical analysis of the current problems that confront the director of physical education in the organization and administration of sports activities with special reference to national, state, and local control.

424 Supervision of Physical Education 2 sem. hrs.

Practice in the techniques of supervision of physical education in elementary and secondary schools; in-service training of the classroom and physical education teacher; relationships with teachers, administrators, and community.

442 Philosophy of Physical Education 3 sem. hrs.

An examination of the philosophical bases of physical education in historical perspective and in the American culture with implications for purposes, programs, and methodology.

443 Problems in Health, Physical Education, and Recreation 2 sem. hrs.

Consideration of current problems in these fields as they affect the teacher of physical education; guidance in individual and group solution of selected professional problems.

447 Evaluation in Physical Education 3 sem. hrs.

Methods for testing and evaluating in the school situation, interpreting data, and understanding statistics in research. Prerequisite: PE 347 or equivalent.

448 Current Research in HPER 2 sem. hrs.

Review and critical analysis of selected research studies. Prerequisite: Introduction to Research 497.

449 Selected Studies in HPER 1-6 sem. hrs.

Students will undertake independent problems or projects and may meet on occasion as a group or independently under the direction of the instructor.

460 Seminar in Dance 2 sem. hrs.

Student participation in lectures, reports, demonstrations, and discussions to gain fluency in oral and written presentation while criticizing or defending concepts related to dance education; critical evaluation of pertinent research and thesis plans; reaction to points of view expressed by occasional guest lecturers.

466 Selected Studies in Dance 1-6 sem. hrs.

Studies in depth within any area of dance education, including both folk forms and theatre forms, approved by the instructor and the head of the department. A student may enroll more than once if there is no duplication of content, and the total does not exceed 6 semester hours.

469 Movement Phenomenology and Perception 3 sem. hrs.

The phenomenon of human movement; perceptual movement relationships and communication; theories of motion and muscular movement, movement behavior. Prerequisite: Health and Physical Education 282.

472 Camping Administration 2 sem. hrs.

Functions and principles of camp administration in organizational and private camps.

475 Organization and Administration of Recreation 3 sem. hrs.

Factors concerning the organization and administration of a recreation program; course designed to meet the needs of the administrators of town, community, or school recreational programs.

481 Applied Physiology 2 sem. hrs.

Application of human physiology to the teaching of physical education; the effects of exercise on the heart, lungs, circulation, and respiration; discussion of current studies pertinent to tests of physical efficiency.

482 Mechanical Analysis of Movement 2 sem. hrs.

Principles of physics applied to body movement; analysis of body positions and modes of locomotion; muscular and mechanical analysis of selected movement skills.

483 Advanced Corrective Procedures 2 sem. hrs.

Selected screening and evaluative techniques; applications of recent advances in exercise physiology: individualization of health, exercise, and rest programs; administration of school and college adapted and corrective program; school-community liaison. Prerequisite: Health and Physical Education 383.

491 Internship-Seminar in College Teaching in Health and Physical Education 3 sem. hrs.

Credit in this course is given in Education (see Education 491).

497 *Introduction to Research* 3 sem. hrs.

Introduction to research methodology, including use of the library, problem selection, differences in research techniques, and application of statistical models to research designs.

499 *Independent Research for the Master's Thesis* 1-6 sem. hrs.

A student electing the thesis option must take from four to six hours of 499. A proposal for research must be on file before registration for this course is approved by the student's adviser. While registration beyond six hours may be permitted for the convenience of the student, he may not count more than a total of six hours of 499 among the 32 required for the master's degree.

HISTORY

TEACHING STAFF

Head of the Department: Roger J. Champagne. *Office:* Schroeder Hall 340-B

Professors: Helen M. Cavanagh, Roger J. Champagne, Alice M. Eikenberry, Earl A. Reitan, Theodore Sands, Lucy L. Tasher

Associate Professors: Fred Kohlmeyer, Mark A. Plummer, Edward Schapsmeier

The department offers work leading to the following degrees: M.A., M.S., M.S. in Ed. University requirements for these degrees are listed on pages 19-23. Departmental requirements are as follows:

MASTER'S DEGREE IN HISTORY

Courses are taken in history and such related fields as the student's adviser recommends. Each student must earn at least five graduate hours of course work in an historical field other than his major historical field (for example, U. S. History, European History, or some other history field). A thesis is required.

MASTER'S DEGREE IN THE SOCIAL SCIENCES

A program offered jointly by the departments of economics, history, political science and sociology-anthropology and permitting an interdisciplinary approach including courses in two or possibly three of the social sciences (economics, history, political science, sociology-anthropology). A thesis is required.

COURSES

301 *Selected Studies in European History* 3 sem. hrs.

The field of study will vary each semester according to the interests and needs of the students and the availability of instructors. Provided different material is covered, the course may be taken for credit more than once.

302 *Selected Studies in American History* 3 sem. hrs.

The field of study will vary each semester according to the interests and needs of the students and the availability of instructors. Provided different material is covered, the course may be taken for credit more than once.

303 *Selected Studies in the History of Asia* 2 sem. hrs.

The field of study will vary each semester according to the interests and needs of students and the availability of instructors. Provided different material is covered, the course may be taken for credit more than once.

304 *Selected Studies in Latin American History* 3 sem. hrs.

The field of study will vary every semester according to the interests and the needs of the students and the availability of instructors. Provided different material is covered, the course may be taken for credit more than once. Prerequisites: History 245 and 246 or equivalent.

306 *Regional and Area Studies* 1 to 9 sem. hrs.

An intensive study of particular lands, environments, cultures, and peoples. May be given in cooperation with other departments, on or off campus. The areas to be studied, participating departments, and credit hours available in the several departments, will be announced each time the course is offered.

310 *Seventeenth Century America* 3 sem. hrs.

Establishment and development of the American Colonies, from Jamestown to the end of the 17th Century. Special emphasis is given to Puritan New England. Prerequisite: History 231.

311 *Age of the American Revolution* 3 sem. hrs.

The emergence of the United States as an independent nation, from 1763 to the Constitutional Convention of 1787. Prerequisite: History 234.

313 *The Age of Jackson* 3 sem. hrs.

A survey of the awakening of American nationalism as typified by the economic, political, and social and cultural changes of the Jacksonian Period. Prerequisite: History 233.

317 *The United States and the Twentieth Century I* 3 sem. hrs.

The history of the United States from the turn of the century to 1932. Subjects to be examined are Populism, Imperialism, Progressivism, World War I, Era of Normalcy, and the Great Depression.

318 *The United States and the Twentieth Century II* 3 sem. hrs.

The history of the United States from 1933 to the present. Subjects to be examined are New Deal, Isolationism, World War II, Cold War, Fair Deal, and problems confronting our contemporary society.

320 *Lincoln: The Man and His Times* 2 sem. hrs.

Emphasis on the use of biography and collections of Lincoln materials, both private and public. Attention directed especially toward the work of Lincoln in Illinois, his leadership during the Civil War, and his relationships with men and events of his time.

321 *History of American Diplomacy to 1898* 3 sem. hrs.

The history of the diplomatic activities of the American government from the Revolution to 1898.

322 *History of American Diplomacy Since 1898* 3 sem. hrs.

The history of the diplomatic activities of the American government since 1898 to the present.

330 *The Ante-Bellum South* 3 sem. hrs.

Characteristics of and institutions of the South from colonial times to the Civil War. Emphasis on physical, social, economic, and ideological factors.

331 *History of the Mississippi Valley* 3 sem. hrs.

Study in regionalism. Emphasis on the frontier, population movements, natural resources, and unique economic, political and social development.

340 *European Economic History* 3 sem. hrs.

Evaluation of Capitalism, corporations, business cycles, trade, imperialism, industry, labor movements, land tenure and other economic aspects of Western civilization viewed sequentially from ancient times to the present; comparative analysis of the dynamic process of growth as related to the specific sectors in various countries. Prerequisite: Economics 171.

344 *Europe in the 19th Century: 1815-1914* 3 sem. hrs.
Liberalism, nationalism, democracy, militarism, imperialism, and the forces that led to World War I.

347 *Contemporary World History* 3 sem. hrs.
An investigation of the forces of change in the contemporary world. The causes and nature of W.W. I, W.W. II, and the Cold War; Communism, Fascism; impact of industrialization, science, and liberalism; emergence of new nations in Asia and Africa.

352 *The Hellenistic World* 3 sem. hrs.
A comprehensive study of the world bequeathed by Alexander the Great from his death in 323 B.C. to the founding of the Roman Empire in 30 B.C.

354 *Economic and Social History of the Middle Ages* 3 sem. hrs.
Medieval agriculture, trade, industry, and towns.

355 *Intellectual and Cultural History of Middle Ages* 3 sem. hrs.
A study of the intellectual, spiritual, and cultural developments of medieval civilization from late Roman times until the Renaissance. Special attention is focused on the medieval Latin Christian world, primarily, and in the Islamic and Byzantine worlds, secondly.

360 *Tudor-Stuart England, 1485-1689* 3 sem. hrs.
General survey of English history from the beginning of the Tudor dynasty to the Revolution of 1688-89; emphasis is placed on constitutional development, the Church, and overseas expansion.

364 *Modern Germany, 1848 to the Present* 3 sem. hrs.
An analysis of the importance of social, political, and economic factors during the Empire, the Weimar Republic, and the National Socialist Era; and a survey of the background of German unification, and of the period following 1945 in East and West Germany.

366 *Soviet Russia, 1917 to the Present* 3 sem. hrs.
An evaluation of the origins and rise of Bolshevik power, concentrating on those aspects of economic, cultural, and social developments that transformed the USSR into a great power.

380 *History of the Middle East I* 3 sem. hrs.
A political, cultural, social and economic survey of the Middle East from Muhammed to the Ottoman Empire, with emphasis on the origins, development and achievements of the Islamic Age. Prerequisites: History 123 and 124 or History 128.

381 *History of the Middle East II* 3 sem. hrs.
A political, cultural, social and economic survey of the Middle East from the Ottoman Empire to the present, with emphasis on the decay of Islamic civilization and the rise of nationalism in the modern Middle East. Prerequisites: History 123 and 124 or History 128.

401 *Seminar in European History* 2 sem. hrs.
Emphasizes methods and materials of research, and the writing of research papers. General area of study investigated in the seminar will vary each semester according to the special competence of the instructor and the research materials available. Provided different material is studied, the course may be taken for credit more than once.

402 *Seminar in American History*. 2-3 sem. hrs.

411 *Seminar: Eighteenth Century America* 3 sem. hrs.

413 *Seminar: The Coming of the Civil War* 3 sem. hrs.

414 *Seminar: Civil War and Reconstruction* 3 sem. hrs.

417 *Seminar: Twentieth Century America* 3 sem. hrs.

421 *Seminar: Makers of American History* 3 sem. hrs.

422 *History of American Agriculture* 3 sem. hrs.

American agriculture from colonial times to the present. Emphasis on changing farm patterns, efforts to solve production problems, farm organizations and governmental policies.

423 *Seminar: American Economic History* 3 sem. hrs.

424 *American Cultural History I* 3 sem. hrs.

American progress in the fine arts, philosophy, literature, and science, and refinement in tastes and manners. Special note is taken of sectional variations and the impact of immigration, urbanization, and industrialization upon the nation's cultural growth.

425 *American Cultural History II* 3 sem. hrs.

The impact of sectionalism, industrialism, urbanization, immigration, the changing role of women, transportation, and communication upon American culture since 1860.

426 *American Constitutional History 1607-1865* 3 sem. hrs.

The historical emergence of federalism and the development of democratic ideas in our system. Attention is directed to the impact upon our history of social and economic changes in producing a living constitution.

431 *Seminar: The Old Northwest, 1840-1880* 3 sem. hrs.

432 *Research Problems in Local History* 3 sem. hrs.

Intensive study of a problem connected with the political, cultural, and social development of Illinois. For advanced students.

443 *Readings in History* 1-3 sem. hrs.

For the student in residence who, for approved reasons, cannot fit a specific course into his graduate program. The consent of the student's academic adviser is required.

444 *Seminar: Eighteenth Century Britain* 3 sem. hrs.

491 *Internship-Seminar in College Teaching in History*
3 sem. hrs.

Credit for the course is given in Education (see Education 491).

497 *Research Seminar* 1-6 sem. hrs.

Introduction to bibliography, methods of scholarly research and the critical evaluation of research in the field. Must be taken by first year graduate students unless the department requires Education 475. May be repeated by more advanced students who desire direction and constructive criticism as they pursue special research problems.

499 *Independent Research for the Master's Thesis* 1-6 sem. hrs.

A student electing the thesis option must take from four to six hours of 499. A proposal for research must be on file before registration for this course is approved by the student's adviser. While registration beyond six hours may be permitted for the convenience of the student, he may not count more than a total of six hours of 499 among the 32 required for the master's degree.

HOME ECONOMICS

TEACHING STAFF

Acting Head of the Department: Blossom Johnson *Office:* Turner Hall 134

Professor: Blossom Johnson

Associate Professors: Jeannie James, Jacqueline Q. Karch

The department offers work leading to the following degrees: M.A., M.S., M.S. in Ed. University requirements for the master's degree are listed on pages 19-23.

COURSES

301 *Evaluation in Home Economics* 2 sem. hrs.

Examination of various concepts of evaluation and basic principles involved. Study of methods and techniques. Opportunity to work on individual problems.

304 *Curriculum Development in Home Economics* 3 sem. hrs.

Principles of curriculum development as applied to home economics. Attention given to organization, methods, materials, and evaluation in relation to type of program and age level. Opportunity to work on individual or group problems.

313 *Food Customs Around the World* 2 sem. hrs.

An appreciation course considering the food customs of other nations and how they have influenced American meal patterns. Includes laboratory preparation.

316 *Food Investigations* 3 sem. hrs.

Opportunity is given the student to do preliminary research into various cookery problems according to needs and interests. Evaluation of present accepted methods is challenged and revised. Prerequisite: Home Economics 111 or 113.

320 *Demonstration Cookery* 2 sem. hrs.

Development of desirable techniques and standards for the use of demonstration method of presentation of food preparation. Critical evaluation of individual and team demonstrations suitable for use in teaching, club work, and adult education classes. Prerequisite: Home Economics 113.

322 *Problems in Clothing* 3 sem. hrs.

Economics of clothing; children's clothing. Advanced construction experiences including pattern making or draping. Prerequisite: Home Economics 124.

323 *Advanced Textiles* 2 sem. hrs.

Survey of recent developments in the textile field, particularly the man-made fibers and their products. Attention is given to the textile market situation's significance to the consumers. Prerequisite: Home Economics 120.

324 *Advanced Costume Design and Draping* 3 sem. hrs.

Theory of design development through draping technique and application to varied figure forms.

401 *Supervision of Student Teaching in Home Economics*
3 sem. hrs.

Critical survey of the objectives of the student teaching program; responsibilities of the supervising teacher, and techniques of supervision. Practical experience in the preparation of supervisory materials.

402 *Seminar in Home Economics* 2 sem. hrs.

Critical investigation of recent literature in the field of home economics and evaluation of pertinent research studies.

406 *Household Equipment* 2 sem. hrs.

Equipment for the modern home and home economics laboratory. Group and individual experiences with various types of labor-saving equipment.

408 *Family and Child Development* 3 sem. hrs.

Fundamental and current problems regarding the child and the family. Students will obtain practice in problem solving and committee projects.

409 *Recent Trends in Home Economics* 2 sem. hrs.

Developments in the field as reflected in more recent practices, survey of methods and materials being used, and review of current professional literature.

410 *Family Housing Problems* 3 sem. hrs.

Current trends and problems in housing with emphasis on family living as related to aesthetic, social, economic, and managerial aspects.

412 *Advanced Home Management* 3 sem. hrs.

Planning, directing, and coordinating of material and human resources in the home. Experiences are provided which enable students to know and use principles basic to modern household processes. Prerequisite: Home Economics 236.

414 *Special Problems in Clothing* 3 sem. hrs.

Individual problems in clothing construction.

416 *Advanced Problems in Food Investigation* 3 sem. hrs.

Experimental study of foods and food preparation. Opportunity for individual and small group investigations.

418 *Selection of Processed Foods* 2 sem. hrs.

Appraisal of processed foods to determine practical utilization of various types. Reports and discussion will be supplemented by field trips and comparative studies in the laboratory. Prerequisite: Home Economics 113.

420 *Advanced Nutrition* 3 sem. hrs.

Current nutrition research as applied to improved dietary planning. Prerequisite: Home Economics 106, 113; Physical Sciences 110.

422 *History of Costume* 3 sem. hrs.

Historical development of textiles and costumes as a background for understanding modern fabrics and styles.

424 *Selected Problems in Home Economics* 1-6 sem. hrs.

May be chosen by the student for investigation in any of the areas of home economics. Approval by the instructor and the head of the department is required. A student may enroll in the course more than once if there is no duplication of material.

426 *Advanced Tailoring* 3 sem. hrs.

Various tailoring techniques. Students tailor garments selected to provide a variety of experiences using those techniques that insure a well-made professional product.

491 *Internship-Seminar in College Teaching in Home Economics*
3 sem. hrs.

Credit for this course is given in Education (see Education 491).

499 *Independent Research for the Master's Thesis* 1-6 sem. hrs.

A student electing the thesis option must take from four to six hours of 499. A proposal for research must be on file before registration for this course is approved by the student's adviser. While registration beyond six hours may be permitted for the convenience of the student, he may not count more than a total of six hours of 499 among the 32 required for the master's degree.

INDUSTRIAL TECHNOLOGY

TEACHING STAFF

Acting Head of the Department: Roger D. Blomgren *Office:* Turner Hall 136
Professors: William D. Ashbrook, R.D. Blomgren, John L. Johnston, Charles B. Porter

Associate Professors: Claude Bell, F. D. Kagy, J. E. Talkington

The department offers work leading to the following degrees: M.S., M.S. in Ed. University requirements for master's degrees are listed on pages 19-23.

COURSES

300 *Contemporary Industrial Education* 2 sem. hrs.

Prominent leaders and analysis of trends in industrial education.

301 *Industrial Arts in the Elementary School* 2 sem. hrs.

Educational principles underlying industrial arts and their application in the elementary activity program.

302 *Evaluation Techniques in Industrial Education* 3 sem. hrs.

Historical background of measurement in industrial education; examination of objectives and methods; evaluation of student abilities and growth; evaluation of housing and equipment.

303 *Principles of General Shop Organization* 2 sem. hrs.

Organizing and teaching procedures in the multiple-activity shop.

304 *Occupational and Job Analysis* 2 sem. hrs.

Techniques and procedures of analyzing industrial occupations and jobs into their basic elements for instructional purposes.

305 *Improvement of Instruction in Industrial Education* 3 sem. hrs.

Objectives, content, and techniques for improving the teaching of industrial arts.

306 *Technical Computer Programing* 3 sem. hrs.

Theory and application of FORTRAN II-D, SPS, and APT to the solution of problems in industrial process control and digital drafting. Prerequisite: Industrial Technology 111.

331 *Machine Shop Technology III* 3 sem. hrs.

Advanced machine shop technology and practice, including problems in machine design and construction through the use of various steels and castings. Includes set-up computations, project designs and development, technical reports, production setups on the turret lathe, and numerical control machine programing. Prerequisite: Industrial Technology 231.

341 *Television Circuits* 3 sem. hrs.

Technical aspects of television systems. Laboratory practice in circuit analysis, testing, and repair of television receivers. Prerequisite: Industrial Technology 242.

374 *Methods and Materials of Teaching Driver Education*

3 sem. hrs.

Materials and measures appropriate for driver education. Development of teaching units, student evaluation procedures peculiar to driver education. Laboratory experience includes programing and teaching beginning drivers in traffic simulators, behind-the-wheel, on the street, and in the classroom. Prerequisite: Industrial Technology 375 or 377, or consent of the instructor.

375 *Traffic Enforcement* 2 sem. hrs.

An intensive survey of the courts, the Division of Motor Vehicle Administration and Enforcement, dealing with the organization and administration of these divisions and specialized areas of accident investigation, court functions and procedures, qualifications and standards for court personnel, driver licensing, safety and financial responsibility laws, and driver improvement. Prerequisite: Industrial Technology 272 or concurrent enrollment.

376 *Problems and Research in Driver Education* 3 sem. hrs.

Overview of problems confronting persons in this field and major research findings applicable to this area. Emphasis is given to gaining a better understanding of research data planning for greater utilization of research findings in both school and community traffic safety endeavors. Prerequisite: Industrial Technology 373 or concurrent enrollment.

377 *Traffic Engineering* 2 sem. hrs.

An investigation of the traffic engineering function relating to the cost of financing road systems. Acquisition of right-of-way, highway geometric design, collection, analysis, and interpretation of accident records, and other data needed to bring about the modification of existing physical features necessary to reduce accidents, to alleviate congestion within an area, and to plan for future needs within a community. Prerequisite: Industrial Technology 272 or concurrent enrollment.

400 *Foundations of Industrial Education* 3 sem. hrs.

Underlying movements and philosophies which have influenced the development of industrial education.

402 *Organization and Administration of Industrial Education*
3 sem. hrs.

Consideration of the problems confronting the teacher and administrator and the basis for their solution.

403 *Seminar in Industrial Education* 2 sem. hrs.

Consideration of problems in industrial education and accident prevention which are of greatest concern to the group and to the individual student.

404 *Special Projects in Industrial Education* 1-3 sem. hrs.

Individual investigation in one or more selected areas of industrial education or accident prevention. Some laboratory work may be done. Provided different subject matter is covered, the course may be taken more than once, but no more than six semester hours of cumulative credit may be earned. Prerequisite: Consent of the instructor and Head of the Department.

405 *Philosophy of the Practical Arts and Vocational Education*
3 sem. hrs.

Philosophy and principles upon which the practical arts and vocational education are based. Intended to serve administrators and teachers, especially teachers of the practical arts and vocational subjects.

491 *Internship-Seminar in College Teaching in Industrial Education*
3 sem. hrs.

Credit for the course is given in Education (see education 491).

499 *Independent Research for the Master's Thesis* 1-6 sem. hrs.

A student electing the thesis option must take from four to six hours of 499. A proposal for research must be on file before registration for this course is approved by the student's adviser. While registration beyond six hours may be permitted for the convenience of the student, he may not count more than a total of six hours of 499 among the 32 required for the master's degree.

LATIN
(See Foreign Languages)

MATHEMATICS

TEACHING STAFF

Head of the Department: Clyde T. McCormick. **Office:** Schroeder Hall 104.

Professors: Douglas R. Bey, Francis R. Brown, Clyde T. McCormick.

Associate Professors: Richard D. Crumley, Kwang Chul Ha, Kenneth A. Retzer

Assistant Professors: D. Frank Fox, James L. Nelson

The Department of Mathematics offers graduate work leading to the degrees of Master of Science and Master of Arts. Each student must meet the general University requirements for the degree he seeks, and he must meet the following departmental requirements: (1) Of the 32 semester hours required for the degree, at least 24 must be in approved courses in mathematics, and at least 12 of these in 400 level courses. The remaining 8 hours may be taken in mathematics or, with the approval of the Head of the Mathematics Department, students may elect 8 hours in an outside minor. (2) Two basic year sequences chosen from 312-313, 315-316, 347-348, 350-351 are required. Students are expected to meet at least half of this requirement on the undergraduate level. (3) All candidates for the degree of Master of Science or Master of Arts in Mathematics must pass a comprehensive examination over at least three areas in mathematics which are included on the current list approved by the Head of the Department, and in one other area, which may be within the department or in a minor field. A thesis is optional.

Students wishing to meet requirements for the secondary or college teaching programs should plan their programs accordingly with their advisers.

The Master of Science in Education degree may be elected by students meeting the undergraduate and graduate requirements listed on page 20.

COURSES

301 *Mathematical Topics for Elementary Teachers* 3 sem. hrs.

Significant problems, points of view, and trends in the teaching of arithmetic. Investigation of research related to organization, content, and techniques in this field. May not be used to satisfy the requirements for a major, comprehensive major, minor, or a graduate degree in mathematics. Prerequisite: Mathematics 201 or teaching experience.

302 *Mathematical Topics for Junior High Teachers* 2 sem. hrs.

Significant problems, points of view, and trends in the teaching of junior high school mathematics. Discussion of the implication of logic and foundations of mathematics for the teaching of selected topics in junior high school mathematics. May not be used to satisfy the requirements for a major, comprehensive major, minor, or a graduate degree in mathematics. Prerequisite: Mathematics 201 or 202 or teaching experience.

306 *Set Theory* 3 sem. hrs.

Elementary logic; set algebra; relations and functions; axioms for set theory; equivalence; ordinals and cardinals. Prerequisite: Mathematics 116.

308 *Matrix Theory* 2 sem. hrs.

Computational theory of matrices; matrix operations; inversion; solution to linear systems; eigenvalues and eigenvectors. Prerequisite: Mathematics 116.

310 *Number Theory* 3 sem. hrs.

Development of the number system; repeating decimals; congruences; diophantine equations; continued fractions; nonlinear congruences; quadratic residues. Prerequisite: Mathematics 116.

312 *Introduction to Higher Geometry I* 3 sem. hrs.

Foundations of geometry, synthetic projective geometry, and properties of projective spaces. Coordinate systems and postulates of separation. Analytic projective geometry related to synthetic. Affine geometry. Prerequisite: Mathematics 116.

313 *Introduction to Higher Geometry II* 3 sem. hrs.

Euclidean geometry, parallelism, similarity, congruency, directed angles, perpendicularity, the evolution of geometry, constructions, hyperbolic and elliptic geometries. Introduction to topology. Prerequisite: Mathematics 312.

315 *Introduction to Abstract Algebra I* 3 sem. hrs.

Sets and mappings; groups; homomorphisms; quotient groups; the Sylow theorems; rings and ideals; fields; Euclidean rings. Prerequisite: Mathematics 116.

316 *Introduction to Abstract Algebra II* 3 sem. hrs.

Polynomials; vector spaces; extension fields; the beginnings of Galois theory; matrices; the theorems of Wedderburn or Frobenius. Prerequisite: Mathematics 315.

320 *History of Mathematics* 2 sem. hrs.

Development of mathematics in the area of number, form, directness, continuity and application. Some emphasis on recent developments in mathematics. Prerequisite: Mathematics 116.

323 *Mathematics for the Secondary School* 3 sem. hrs.

Current issues in the teaching and learning of mathematics. Problems and points of view in the selection and placement of topics of secondary mathematics. Use of language and symbolism. Analysis of experimental programs, recent trends, and practices in the classroom. Prerequisite: Mathematics 116 or 302.

325 *Finite Mathematical Structures* 2 sem. hrs.

Methods of proof; finite algebra; partition and counting; stochastic processes; matrix algebra; theory of games and linear programming; application to behavioral science problems. Prerequisite: Mathematics 116.

335 *Advanced Calculus* 3 sem. hrs.

Differential calculus of functions of several variables; vector differential calculus; integral calculus of functions of several variables; vector integral calculus; infinite series. Prerequisite: Mathematics 116.

340 *Differential Equations* 3 sem. hrs.

First order ordinary differential equations; linear differential equations; existence theorems and numerical methods of solution. Use of analog computers. Prerequisite: Mathematics 116.

345 *Vector Analysis* 2 sem. hrs.

The dot and cross product; vector differentiation; gradient, divergence, and curl; vector integration; the divergence theorem, Stokes' theorem, and related integral theorems; curvilinear coordinates. Prerequisite: Mathematics 116.

347 *Introduction to Real Analysis I* 3 sem. hrs.

Sequences and series of real numbers; continuity; metric space topology; the Riemann Integral; the fundamental theorems of calculus. Prerequisite: Mathematics 116.

348 *Introduction to Real Analysis II* 3 sem. hrs.

The elementary functions; sequences and series of functions; the Lebesgue Integral. Fourier Series. Prerequisite: Mathematics 347.

349 *Complex Analysis I* 3 sem. hrs.

Fundamentals of analytic function theory: the complex number plane; differentiability and analyticity; Cauchy's theorem and its implications; sequence and series including Taylor series and Laurent series. Prerequisite: Mathematics 347.

350 *Mathematical Statistics I* 3 sem. hrs.

Sample spaces and random variables; frequency functions; linear functions of random variables; nature of statistical functions; moment generating function and application to standard frequency functions. Prerequisite: Mathematics 116.

351 *Mathematical Statistics II* 3 sem. hrs.

Correlation and regression equations; development of Chi-square; student's t and F distributions; likelihood ratio tests; analysis of variance and nonparametric methods. Prerequisite: Mathematics 350.

365 *Mathematical Logic* 3 sem. hrs.

Propositional calculus; independence; many-valued logics; interpretations; satisfiability and truth; first-order theories; consistency and completeness theorems. Prerequisite: Mathematics 116.

366 *Boolean Algebra and Logical Design* 3 sem. hrs.

Switching Circuits; Boolean Algebra as a model for propositional calculus; use of diagrams as an aid to logical design; logical design of digital computers; Laboratory experience with logical programing. Prerequisite: Mathematics 116 (laboratory arranged).

368 *Principles of Digital Computers* 3 sem. hrs.

Fundamental concepts of programing; FORTRAN II language; basic machine language; experience in writing and running programs on a digital computer. Prerequisite: Mathematics 116 (laboratory arranged).

370 *Numerical Analysis* 3 sem. hrs.

Interpolation and approximation; error analysis; integration; techniques for solving differential equations; Newton's method; matrix manipulation. Prerequisite: Mathematics 116, 368 or computer experience.

412 *Projective Geometry* 3 sem. hrs.

Emphasis on fundamentals common to all geometry. Topics include a study of invariance under a variety of transformations giving rise to projective, affine and metric geometries. Use is made of homogeneous point and line coordinates in "n" dimensional space. Prerequisite: Mathematics 312.

415 *Theory of Groups* 3 sem. hrs.

Semigroups and groups; homomorphisms; products; finite abelian groups; Sylow's theorems; solvable groups; nilpotent groups. Prerequisite: Mathematics 315.

416 *Theory of Rings* 3 sem. hrs.

Rings: Ideals and Homomorphisms; subdirect sums; rings of linear transformations; the density theorem; the Jacobson radical. Prerequisite: Mathematics 315.

421 *Topics in Algebra for Teachers* 3 sem. hrs.

Problems in the teaching of secondary school algebra. Investigation of reports, research, and recent trends in this area. Opportunity for study of particular problems of individual interest. Prerequisite: Mathematics 251 or 315.

422 *Topics in Geometry for Teachers* 3 sem. hrs.

Problems in the teaching of secondary school geometry. Investigation of reports, research, and recent trends in this area. Special emphasis is given to the objectives and content of secondary school geometry. Opportunity for the study of particular problems of individual interest. Prerequisite: Mathematics 211 or 312.

445 *Differential Geometry* 3 sem. hrs.

The theories of curves and surfaces in three-dimensional Euclidean space; local intrinsic and non-intrinsic properties of a surface; a differential geometry in the large; differential geometry of "n" dimensional space; tensor analysis; Riemannian geometry. Prerequisites: Mathematics 312 or 345, and Mathematics 251 or 315.

446 *Functional Analysis* 3 sem. hrs.

Normed and Banach spaces along with metric spaces; inner product spaces and Hilbert spaces; spectral theory. Prerequisites: A course in linear algebra and Mathematics 347.

447 *Real Analysis I* 3 sem. hrs.

A review of the Riemann-Stieltjes integral and the Lebesque integral for bounded functions; the general Lebesque integral; functions of bounded variation and absolute continuity; introduction to general measure and integration theory. Prerequisite: Mathematics 348.

448 *Real Analysis II* 3 sem. hrs.

A continuation of Mathematics 447. LP spaces; general measure and integration theory. Prerequisite: Mathematics 447.

449 *Complex Analysis II* 3 sem. hrs.

Application of the elementary theory is made to the study of conformal mappings, Riemann surfaces, meromorphic functions, infinite products of holomorphic functions, and the integration of differential forms. Prerequisite: Mathematics 349.

450 *Finite Sampling I* 3 sem. hrs.

Application and theory of sampling. Mathematical sampling: simple, stratified, and cluster. Evaluating sampling plans with respect to precision and cost. Prerequisite: Mathematics 350.

451 *Finite Sampling II* 3 sem. hrs.

Analysis of sampling designs from numerous fields of application. Use of basic sampling theorems in the development of efficient statistical models. Prerequisite: Mathematics 450.

452 *Theory of Statistics* 3 sem. hrs.

Order statistics, limiting distributions, sufficient statistics in the theory of estimation noncentral distributions, likelihood ratio tests, distribution of certain quadratic forms in the analysis of variance. Prerequisite: Mathematics 351.

455 *Stochastic Processes* 3 sein. hrs.

Sequences of events governed by probabilistic laws having applications in physics, engineering, biology, medicine, psychology, oceanography, and economics. Basic models include the Wiener and Poisson processes, renewal counting processes, Markov chains, random walks, and birth and death processes. Prerequisite: Mathematics 351.

458 *The Design of Experiments* 3 sem. hrs.

The practical application of general theorems to the problems of testing hypotheses in major fields of knowledge. The logic of planned experimentation, choice of statistical technique and analysis of data. Prerequisite: Mathematics 351.

470 *General Topology I* 3 sem. hrs.

Topological spaces; uniform spaces; product and quotient spaces; separation properties and connected spaces; compact spaces. Prerequisites: Mathematics 315 and 347.

471 *General Topology II* 3 sem. hrs.

A continuation of Mathematics 470. Metrizability conditions, continuity; the theory of convergence using both filters and nets; completions and compactifications. Prerequisite: Mathematics 470.

480 *Foundations of Mathematics* 3 sem. hrs.

The linear continuum and the real number system; groups and their significance for the foundations; the reduction of mathematics to a logical form; the Frege-Russell thesis; calculus of propositions; intuitionism and formalism. Prerequisites: Mathematics 312, 315, 347; or consent of instructor.

490 *Seminar in Mathematics* 1 to 4 sem. hrs.

Topics in theoretical and applied mathematics discussed by staff and visiting lecturers; individual study and student papers. The student may enroll in the seminar for credit more than once if the subject matter is not duplicated and the total credit earned does not exceed eight semester hours. Prerequisites: Mathematics 312, 315, 347; or consent of instructor.

491 *Internship-Seminar in College Teaching in Mathematics*
3 sem. hrs.

Credit for the course is given in Education (see education 491). Prerequisites: Mathematics 312, 315, 347; or consent of instructor.

499 *Independent Research for the Master's Thesis* 1-6 sem. hrs.

A student electing the thesis option must take from four to six hours of 499. A proposal for research must be on file before registration for this course is approved by the student's adviser. While registration beyond six hours may be permitted for the convenience of the student, he may not count more than a total of six hours of 499 among the 32 required for the master's degree.

MICROBIOLOGY
(See Biological Sciences)

MUSIC

TEACHING STAFF

Head of the Department: Joseph M. Wilson *Office:* Centennial Building, East 155B

Professors: Leslie M. Isted, Harlan W. Peithman, Howard H. Rye, Irwin Spector, Joseph M. Wilson, Lyle M. Young

Associate Professors: Lloyd W. Farlee, John W. Ferrell, James L. Roderick

The department offers work leading to the following degrees: M.S., M.S. in Ed. University requirements for these degrees are listed on pages 19-23.

All students seeking an advanced degree in music must take placement examinations in the areas of theory, history and literature, and piano. Departmental requirements will be determined in part by the results of the placement tests, and students should check with their departmental adviser to develop their individual programs of study. Students must also have taken the music section of the Graduate Placement Examination prior to their acceptance as candidates for the degree.

Any student wishing to take graduate applied music must audition in their specific performance area.

COURSES

301 *Form and Analysis in Music* 2 sem. hrs.

Structure of classical music ranging from simpler compositions as found in piano works to more elaborate material as found in major sonatas and symphonies.

305 *Composition* 3 sem. hrs.

Free composition in larger forms with opportunities for performance of original works for voices, instrumental combinations, or full orchestra.

309 *Orchestration* 3 sem. hrs.

Review of instruments: ranges, timbres, technical difficulties and limitations. Arranging for combinations of instruments, full band and orchestra. Study of problems contained in standard repertory. Special attention to problems of school band and orchestra scoring.

351 *The Opera* 2 sem. hrs.

Historical development of the opera with emphasis on stylistic elements and trends of various periods. Study of the plots and music through recordings, piano scores, full scores, as well as live performances.

361 *Instrumental Techniques* 3 sem. hrs.

Problems and procedures in developing instrumental classes and organizations.

363 *Choral Techniques* 2 sem. hrs.

Clinical aspects of the chorus rehearsal, contemporary choral practices, repertory and source material, interpretation and program building. Prerequisite: course in conducting or practical experience.

366 *Tonal Measurement* 3 sem. hrs.

Physical measurement of musical tone in relation to the problems in the classroom, the rehearsal, and the performance.

371 *Music for the Exceptional Child* 3 sem. hrs.

Trends in musical education for exceptional children. Techniques and materials for a functional program of singing, playing, listening, and creative activities based upon needs of the exceptional child.

377 *Music Education in the Elementary Grades* 3 sem. hrs.

An advanced course dealing with the purposes, content, materials and teaching procedures in general music classes in elementary schools and including supervisory practices, in-service workshops and curriculum planning. Designed to meet the needs of music resource persons in elementary education, elementary classroom teachers, music teachers, and music supervisors. Students must have had a prior course comparable in content to Music 277 or Music 262.

384 *Opera Production* 3 sem. hrs.

Operas and operettas including the problems of presenting high school and college productions. Members of the class participate in the production of an opera or operetta. Prerequisite: approval of the Head of the Department of Music.

400 *Seminar in Music Education* 3 sem. hrs.

Individual and group study of trends, practices, and problems in the field of music education.

402 *Form and Analysis in Music* 3 sem. hrs.

Continuation of Music 301 with emphasis on harmonic structure.

404 *Chromatic Harmony* 3 sem. hrs.

Practical experience in writing polyphonically and homophonically using various kinds of embellishments and chromatically altered tones. A major creative project is required. This may be in the form of an original composition, arrangement, or transcription.

431 *Applied Music—Brass* 1 or 2 sem. hrs.

Individual instruction on trumpet, cornet, French horn, trombone, baritone, and tuba. This course may be repeated for credit.

433 *Applied Music—Organ* 1 or 2 sem. hrs.

Individual instruction on organ. This course may be repeated for credit.

435 *Applied Music—Piano* 1 or 2 sem. hrs.

Individual instruction on piano. This course may be repeated for credit.

436 *Applied Music—Strings* 1 or 2 sem. hrs.

Individual instruction in violin, viola, cello, stringed bass. This course may be repeated for credit.

437 *Applied Music—Voice* 1 or 2 sem. hrs.

Individual instruction in voice. This course may be repeated for credit.

438 *Applied Music—Woodwinds* 1 or 2 sem. hrs.

Individual instruction in flute, clarinet, oboe, bassoon, and saxaphone. This course may be repeated for credit.

452 *The Symphony* 3 sem. hrs.

Survey of the symphony orchestra and symphonic literature from early eighteenth century to the present day. Study through recordings, orchestral scores, and piano scores.

453 *Problems in Music History* 3 sem. hrs.

A systemization of practices leading to the development of historical research and other techniques of investigation. A study of source materials, analytical procedures, and selected readings with certain specific topics studied as exercises. Students will work in areas of personal interest. A reading knowledge of a foreign language is desirable.

454 *History of Musical Instruments* 2 sem. hrs.

Evolution of musical instruments from the origins to the present, with particular regard to music and general culture. The development of primitive, Oriental, and western instruments.

455 *Music in America* 3 sem. hrs.

Indigenous and borrowed influences in American music from the time of the early settlements through periods of expansion to present day activities. A background of American musical style and culture and an understanding of present trends will be developed.

460 *Psychology of Music Education* 3 sem. hrs.

Investigation of the psychological attributes of sound and their effects upon the behavior of the human organism.

462 *Tests and Measurements in Music* 3 sem. hrs.

Bases upon which aptitude and achievement in music have been and may be measured.

463 *Experimental Studies* 3 sem. hrs.

Experimental method as applied to problems of music learning, including a survey of research of music education and related areas. An individual experimental term project will be required.

464 *Teaching of Theory* 2 sem. hrs.

Analysis of current practices in the teaching of theory; techniques of teaching theory during the regular rehearsal of performing groups, and an analysis of source material. Project: the development of a practical course in theory as it relates to the student's own teaching situation. Prerequisite: teaching experience or advanced standing in theory.

465 *Sensory Integration in Music Learning* 2 sem. hrs.

Practical considerations necessary for the operation and use in the classroom of audio-visual aids to music learning.

468 *Conducting* 2 sem. hrs.

Critical examination of scores with reference to tempo, phrasing, nuance, balance, timbre, and baton techniques involved. For experienced teachers.

491 *Internship-Seminar in College Teaching in Music* 3 sem. hrs.

Credit for the course is given in Education (see education 491).

497 *Research Seminar* 3 sem. hrs.

Introduction to bibliography, methods of scholarly research and critical evaluation of research. Must be taken by first year graduate students in the secondary curriculum unless the department requires Education 475. May be repeated by more advanced students who desire direction and constructive criticism as they pursue a special research problem.

499 *Independent Research for the Master's Thesis* 1-6 sem. hrs.

A student electing the thesis option must take from four to six hours of 499. A proposal for research must be on file before registration for this course is approved by the student's adviser. While registration beyond six hours may be permitted for the convenience of the student, he may not count more than a total of six hours of 499 among the 32 required for the master's degree.

PHYSICAL EDUCATION

(See Health and Physical Education)

PHYSICS

TEACHING STAFF

Head of the Department: Harold J. Born. Office: Science Building 128

Professors: Harold J. Born, DeVerne H. Dalluge

Associate Professor: John E. Crew

Assistant Professor: Robert D. Young

MASTER'S DEGREE IN PHYSICS

The department offers work in physics leading to the following degrees: M.S., M.S. in Ed. University requirements for master's degrees are described on pages 19-23.

MASTER'S DEGREE IN PHYSICAL SCIENCES

The department offers work jointly with the Department of Chemistry leading to the following degrees: M.S., M.S. in Ed. These are flexible programs, permitting a combination of the two fields. University requirements for the master's degrees are listed on pages 19-23.

COURSES

300 *Basic Concepts of Physics* 3 sem. hrs.

Modern aspects of mechanics, heat, light, sound, electricity, and atomic physics. Designed for teachers of elementary and junior high school science with limited background in the area of physics. Not open to students who have had one semester of college laboratory physics within the past ten years, or with first or second fields in chemistry, physics, and the physical sciences. Prerequisite: Physics 100, 101, or 205, or two years of teaching experience.

301 *Problems in the Teaching of High School Physical Sciences* 3 sem. hrs.

(Offered jointly with the Department of Chemistry)

A study of modern methods and problems confronting the teachers of Physical Science. Involves a careful study of CBA, Chem Study, PSSC, and regular high school chemistry and physics. Brief overview of the K-12 physical science program will be undertaken. For teaching majors only. Prerequisite: Ten semester hours each of physics and chemistry.

302 *Municipal and Industrial Science* 3 sem. hrs.

(Offered jointly with the Department of Chemistry)

Specific aspects of community and industrial problems. Includes trips to industries and research laboratories. Lectures and discussion periods involving related chemical and physical principles are coordinated with the field trip program. Gives a background in applied science as an enrichment for classroom teaching. Prerequisites: Twenty-two hours of physical sciences including one year of general chemistry, one year of general physics, and two 200- or 300-level courses in chemistry or physics.

305 General Science 3 sem. hrs.

(Offered jointly with the Department of Chemistry)

Objectives of general science. Selection of subject matter, tests, texts, workbooks, equipment, and supplies will be considered. For teachers qualified to teach general science in the elementary, junior high, and senior high schools.

320 Mechanics 3 sem. hrs.

A continuation of Mechanics 280 with emphasis on accelerated coordinate systems, Lagrange's equations, rigid body motion on three dimensions, Hamilton's equations, and theory of small vibrations. Prerequisites: Physics 220 and Mathematics 340.

340 Electricity and Magnetism 3 sem. hrs.

Maxwell's equations and boundary value problems, alternating currents, electronics, radiation and propagation of electromagnetic waves. Prerequisites: Physics 220, 240, and Mathematics 340.

352 Modern Physics 3 sem. hrs.

The photon, electromagnetic radiation, neutrons and nuclear forces, radio activity and its detection, nuclear reactions, elementary particles, and high energy physics. Prerequisite: Physics 252.

384 Introduction to Quantum Mechanics 3 sem. hrs.

Mathematical formulation of quantum theory and applications to simple systems. Prerequisites: Physics 284 and Mathematics 340.

420 Advanced Mechanics 3 sem. hrs.

Reference frames and their transformations; dynamics of particles and system of particles; dynamics of rigid rotators; Hamilton's principle; Lagrange's equations; introductory elasticity and fluid dynamics. Prerequisite: Physics 320.

440 Advanced Electricity and Magnetism 3 sem. hrs.

Maxwell's equations; scalar, vector potentials; dielectrics and conductors; Maxwell's theory of the electromagnetic field. Prerequisite: Physics 340.

456 Nuclear Physics 3 sem. hrs.

Properties of nuclei, radioactivity, nuclear interactions, nuclear models, conservation laws and symmetry principles, and elementary particles. Prerequisite: Physics 352.

460 Introduction to Solid State Physics 3 sem. hrs.

Description and classification of crystals, with an explanation of their elastic, electric and magnetic, electronic and optical properties. Prerequisite: Twelve semester hours of physics numbered 200 or higher.

470 Graduate Laboratory 1-3 sem. hrs.

Techniques and experiments in areas of modern physical research. May be repeated for a total of three semester hours of credit, but no more than two semester hours may be earned per registration. Prerequisite: Consent of the Head of the Department.

484 Advanced Quantum Mechanics 3 sem. hrs.

A review of the revisions of classical physics made necessary by experimental evidence. Mathematical formulation of quantum mechanics and applications to the hydrogen atom and simple systems. Scattering theory. Various approximation methods including perturbation theory. Prerequisite: Physics 384.

486 *Theoretical Physics* 3 sem. hrs.

Selected topics in the mathematical techniques needed for graduate physics and applications of these techniques to mechanics, electricity and magnetism, and relativity. Prerequisites: Mathematics 340, Physics 220, 240, plus one 300-level course.

491 *Internship-Seminar in College Teaching in Physics* 3 sem. hrs. Credit for the course is given in Education (see Education 491).

499 *Independent Research for the Master's Thesis* 1-6 sem. hrs.

A student electing the thesis option must take from four to six hours of 499. A proposal for research must be on file before registration for this course is approved by the student's adviser. While registration beyond six hours may be permitted for the convenience of the student, he may not count more than a total of six hours of 499 among the 32 required for the master's degree.

POLITICAL SCIENCE

TEACHING STAFF

Head of the Department: Alice L. Ebel. Office: Schroeder Hall

Professors: Alice L. Ebel, Walter S. G. Kohn, James K. Olsen

Assistant Professor: Harvey Zeidenstein

MASTER'S DEGREE IN POLITICAL SCIENCE

The department offers work leading to the following degrees: M.A., M.S., M.S. in Ed. A thesis is required. University requirements for a master's degree are listed on pages 19-23.

MASTER'S DEGREE IN SOCIAL SCIENCES

The department offers work jointly with the departments of economics, history, and sociology-anthropology, leading to the following degrees: M.A., M.S., M.S. in Ed. The program is interdisciplinary, including courses in two or possibly three of the social sciences (economics, history, political science, sociology-anthropology). A thesis is required. University requirements for the master's degree are listed on pages 19-23.

COURSES

306 *Regional and Area Studies* 1-9 sem. hrs.

An intensive study of particular lands, environments, cultures, and people. May be given in cooperation with other departments, on or off campus. The areas to be studied, participating departments, and credit hours available in the several departments, will be announced each time the course is offered.

351 *American Constitutional Law* 3 sem. hrs.

Analysis and discussion of leading cases interpreting the United States Constitution with consideration given to the political and economic conditions underlying the decisions.

353 *Political Parties* 3 sem. hrs.

American party system as to its development, organization, and activities. Emphasis upon a realistic constructive knowledge of present-day parties.

356 *American Political Thought* 2 sem. hrs.

A survey of major political thinkers and statesmen who have contributed to the development of American political thought and institutions from the colonial period to the present.

358 *Political Systems: Theory and Practice* 2-3 sem. hrs.

The origin, theory, and practice of constitutional democracies and of totalitarian regimes. The democratic challenge to dictatorships. The autocratic challenge to constitutionalism. Provided different material is covered, the course may be taken for credit more than once.

368 *Public Opinion and Propaganda* 3 sem. hrs.

Basic implications, modern techniques, and current machinery of communication. Control exercised by the folkways, government, business, religion, motion pictures, radio, and education. Special attention is focused on those phases of the material which are related to the work of the school. May be considered political science as well as sociology.

450 *Readings in Political Science* 1-3 sem. hrs.

A course for the graduate student who would benefit more from a specialized independent type of study adapted to his background and needs. To be taken by permission of the head of the department and the instructor involved.

454 *Selected Studies in American Government* 3 sem. hrs.

National, state, and local governments. Will vary from one semester to another according to the interests and needs of students and availability of instructors. Provided different material is covered, the course may be taken for credit more than once.

455 *Political Thought* 3 sem. hrs.

Intensive study of some of the most important authors of political ideas—Plato, Aristotle, Machiavelli, Hobbes, Locke, Montesquieu, Rousseau, Jefferson, Marx, Mill. Their impact on our modern world.

457 *Seminar in Public Administration* 3 sem. hrs.

Advanced study for graduate students interested in special research projects in the field of public administration. Provided different material is covered, the course may be taken for credit more than once. Admission to seminar by consent of the instructor.

458 *Selected Studies in Foreign Governments and International Organizations* 3 sem. hrs.

Intensive study of particular national or international systems and structures. The general field covered in this course will vary according to the interests and needs of the students and the availability of instructors. Provided different material is covered, the course may be taken for credit more than once.

491 *Internship-Seminar in College Teaching in Political Science*
3 sem. hrs.

Credit for the course is given in Education (see Education 491).

497 *Research Seminar* 1-6 sem. hrs.

Introduction to bibliography, methods of scholarly research and the critical evaluation of research in the field. Must be taken by first year graduate students unless the department requires Education 475. May be repeated by more advanced students who desire direction and constructive criticism as they pursue special research problems.

499 *Independent Research for the Master's Thesis* 1-6 sem. hrs.

A student electing the thesis option must take from four to six hours of 499. A proposal for research must be on file before registration for this course is approved by the student's adviser. While registration beyond six hours may be permitted for the convenience of the student, he may not count more than a total of six hours of 499 among the 32 required for the master's degree.

PSYCHOLOGY

Head of the Department: Walter H. Friedhoff. *Office:* Schroeder Hall 420.
Professors: R. Elizabeth Brown, Robert Crist, Walter Friedhoff, William Gnagey, Stanley S. Marzolf, George McCoy, Herman R. Tiedeman
Associate Professors: Valjean Cashen, Herbert Clark, Robert Hogan, Frank J. Holmes, John Kirchner, Elmer Lemke, Gary Ramseyer
Assistant Professors: Kenneth L. Leicht, James J. Johnson
The department offers the M.A., M.S., and M.S. in Ed. degrees in School Psychology and the M.A. and M.S. in Psychology. Requirements for the master's program are as follows:

Psychology

The following courses are required for a master's degree in Psychology: Psychology 361, 363, 418, 440, 334. Students who have taken any of the required courses as undergraduates and for undergraduate credit may substitute the equivalent number of semester hours with electives. Additional courses are selected on the basis of recommendations of the student's adviser. Students majoring in Psychology may select particular sequences of courses leading to an area of concentration if they desire. Course offerings allow for concentration in General-Experimental (Human Learning), Measurement in the Behavioral Sciences, Counseling (Especially for those students interested in working in junior and senior colleges), and Student Personnel Work in higher education. University requirements for the master's degree are listed on pages 19-23.

School Psychology

The following courses are required for a master's degree in School Psychology: Psychology 361, 363, 418, 440. Students who have completed any of the required courses as undergraduates and for undergraduate credit may use the equivalent number of semester hours with electives. In addition students in this degree program should enroll in Psychology 420, 422, 432 and 433. [The state of Illinois requires that students wishing to be certified as School Psychologists must complete 56 semester hours of psychology at the undergraduate and graduate level, complete a Master's Degree in Psychology or Educational Psychology and complete a one year internship. Students interested in certification must have the courses listed above and may elect from certain other courses in order to meet the 56 semester hour requirement. Such courses will be worked out with the student's adviser.]

COURSES

301 *Developmental Psychology I* 3 sem. hrs.

Study of available research on the motor, mental, and emotional development; growth of understanding; personality of children during pre-adolescence. Prerequisite: Psychology 111.

302 *Developmental Psychology II* 3 sem. hrs.

Study of the available research on the motor, mental and emotional development and personality of the adolescent. Prerequisite: Psychology 111.

320 *History and Systems of Psychology* 3 sem. hrs.

A survey of the historical antecedents of modern psychology, beginning with Aristotle. Examination of modern psychology from a systemic point of view. Prerequisite: Twelve semester hours of psychology.

330 *Experimental Psychology I* 3 sem. hrs.

Simple experiments in the psychological laboratory to give appreciation of the problems of control in the scientific study of behavior. Two lectures and one laboratory period per week plus additional laboratory assignments. Prerequisite: Psychology 111.

331 *Experimental Psychology II* 3 sem. hrs.

Lectures, demonstrations and laboratory experiments dealing with methodology, results, and interpretation of human and animal behaviors with emphasis on sensory processes, perception, and learning. Prerequisite: Psychology 340 or concurrent registration.

334 *Psychological Measurement* 3 sem. hrs.

Use and interpretation of psychological test results with emphasis on the quantitative approach. Group and individual tests studied and demonstrated. Students have practice in giving, scoring, and interpreting standardized tests. Meets the requirements of psychological testing for students in special education. Prerequisite: Psychology 111.

340 *Statistics I* 3 sem. hrs.

Basic statistics used in education and the behavioral sciences. Intensive study of frequency distributions, measures of central tendency and dispersion, and standard scores. Sampling error theory, simple hypothesis testing, correlation techniques, and regression analysis are also covered. The emphasis is on application and interpretation. Prerequisite: Psychology 111 or Sociology 106.

346 *Psychology of Exceptional Children* 2 sem. hrs.

The study of children who deviate markedly above or below the norms of their groups in reference to one or several intellectual, emotional, physical, or social attributes, or any combination of these, so as to create a special problem in regard to their education, development, or behavior. Emphasis is placed on the implications for educational and treatment programs. Prerequisite: Psychology 232 and 331.

347 *Behavior Disorders in Children* 3 sem. hrs.

Medical, psychological, sociological aspects of behavioral disorders of children. Prerequisite: Psychology 115 or Education 102.

348 *Mental Retardation* 3 sem. hrs.

Medical, psychological and sociological characteristics and behavior of the mentally retarded. Methods of classification, causes, and rehabilitative aspects. Prerequisite: Psychology 115 or Education 102.

350 *Psychopathology* 3 sem. hrs.

Psychological aspects of the behavior disorders, including study of the neuroses, psychoses, character disorders, mental deficiencies, and other psychopathological conditions. Prerequisite: Twelve semester hours of Psychology.

452 *Differential Psychology* 3 sem. hrs.

Differences and variations in psychological characteristics among individuals and groups. Effects of various factors in creating individual or group differences. Prerequisite: Psychology 334.

360 *Learning* 3 sem. hrs.

Experimental data bearing on the problem of human learning; learning theory; learning data and theory in relation to the problems of the teacher. Prerequisite: Psychology 111.

361 *Perception* 3 sem. hrs.

Cognitive processes and their relationship to other processes. The relationship of sensation, attention, and memory to perception and the factors which influence perception. Prerequisite: Nine semester hours of Psychology.

362 *Comparative Psychology* 3 sem. hrs.

The study, analysis, and investigation of the relationships among different species with regard to their behavior, emotions, and mental processes. Prerequisite: Nine semester hours of Psychology.

363 *Physiological Psychology* 3 sem. hrs.

Physiological and biochemical factors which underlie the behavior of organisms and the mechanisms which mediate between the impinging of stimuli upon the organism and the effect of the organism upon the environment. Prerequisite: Nine semester hours of Psychology.

364 *Motivation* 3 sem. hrs.

Experimental study of drives, social motives, theories of motivation, practical applications. Prerequisite: Nine semester hours of Psychology.

416 *Advanced Educational Psychology* 3 sem. hrs.

A consideration of topics such as learning, retention and forgetting, transfer of training, reading, individual differences, intelligence, language, social class influences on education and mental hygiene in the classroom. Emphasis is placed on the application of psychology to education. Prerequisite: Psychology 115 or Education 102.

418 *Theories of Learning* 3 sem. hrs.

A consideration of the major contemporary learning theories and their relationship to experimental data. Prerequisite: Psychology 330 or 360.

420 *Theories of Personality* 3 sem. hrs.

Analysis of major theoretical formulations concerning personality with emphasis upon their current status and evidential bases.

421 *Behavior Modification* 3 sem. hrs.

Techniques for changing behavior through manipulation of environment. General principles of conditioning plus their application to patterns of problem behavior. Prerequisite: Graduate standing in Psychology.

422 *Practicum: Behavior Modification* 3 sem. hrs.

Use of conditioning techniques under controlled conditions with students personally disturbed by minor behavior problems. Emphasis will also be given to establishing methods for assessing the effectiveness of the techniques employed. Prerequisite: Psychology 421.

430 *Theories and Techniques of Counseling* 3 sem. hrs.

Goals, theoretical foundations, methods, and procedures of school counseling. Emphasizes diagnosis and prognosis in counseling, the dimensions of interview relationships, and the evaluation of counseling procedures. Prerequisite: Psychology 350.

431 *Vocational Counseling* 2 sem. hrs.

Acquiring and using occupational and educational information. Consideration of job requirements and training opportunities; developing occupational units; nature of vocational development.

432 *Psychodiagnostics I* 3 sem. hrs.

Training in individual mental testing with emphasis on the Binet and the Wechsler. Prerequisite: Psychology 350 or concurrent registration.

433 *Psychodiagnostics II* 3 sem. hrs.

Theory of projective methods and development of competence in the use of selected procedures. Prerequisite: Psychology 432.

434 *Psychodiagnostics III* 3 sem. hrs.

Multi-dimensional approaches to personality assessment, with emphasis on the Rorschach test. Prerequisite: Psychology 433.

435 *Diagnostic Procedures* 3 sem. hrs.

The use of interviews, observations and various evaluative devices for diagnostic purposes. Emphasis is on the development of hypotheses. Interest is in the use of the evaluative techniques rather than the instruments themselves. Prerequisite: Graduate standing in Psychology.

436 *Practicum I* 4 sem. hrs.

Clinical practice in the Psychological Counseling Service. Gives students training in individual psychological diagnosis. Twelve hours per week. Prerequisite: Psychology 435 or concurrent registration, Psychodiagnostics I.

440 *Statistics II* 3 sem. hrs.

The logic of statistical inference. An examination of the statistical techniques most commonly employed in research in education and the behavioral sciences. Topics included are interval estimation, the *t* and *f* tests, *chi-square*, one factor analysis of variance, multiple regression, and non-parametric statistics. The emphasis is on application and interpretation. Prerequisite: Psychology 340.

441 *Statistics III* 3 sem. hrs.

The statistical principles of experimental design. Selection, analysis, and interpretation of the most widely employed designs are emphasized. Designs included are the simple randomized, factorial, repeated measures, randomized blocks, latin square, and analysis of covariance. Topics such as multiple comparisons, power, and trend analysis are also covered. Prerequisite: Psychology 440.

443 *Psychometrics II-Correlational Analysis* 3 sem. hrs.

Theory and practice of the psychometric treatment of behavioral data. Particular attention is given to multiple predictors and criteria. Selection of these variables is approached through discussion of various data reduction models. Topics to be covered include: test theory, multiple, partial, and canonical correlation, factor and component analysis. Prerequisites: Psychology 331 and 340.

444 *Psychometrics III-Scaling* 3 sem. hrs.

Theory and methods of constructing scales to represent behavioral variable. Psychological scales, attitude and opinion scales and mental tests are considered within a theoretical framework for the classification of data and data collection methods. Prerequisites: Psychology 340.

450 *Independent Study* 1-6 sem. hrs.

Independent study or investigation of topics of special interest to the individual student. Prerequisite: Formulation of a study or research plan with a faculty supervisor and the approval of the department head.

480 *Seminar in Psychology* 2-3 sem. hrs.

Prerequisite: Permission of the instructor.

**491 *Internship-Seminar in College Teaching of Psychology*
3 sem. hrs.**

Credit for this course is given in Education (see Education 491.)

499 *Independent Research for the Master's Thesis* 1-6 sem. hrs.

A student electing the thesis option must take from four to six hours of 499. A proposal for research must be on file before registration for this course is approved by the student's adviser. While registration beyond six hours may be permitted for the convenience of the student, he may not count more than a total of six hours of 499 among the 32 required for the master's degree.

SOCIAL SCIENCES

MASTER'S DEGREE IN THE SOCIAL SCIENCES

This program is offered jointly with the Departments of Economics, History, Political Science and Sociology-Anthropology, leading to the following degrees: M.A., M.S., M.S. in Ed. Such an interdisciplinary program includes courses in two or possibly three of the social sciences. For the courses offered for this degree see the Departments of Economics, History, Political Science, and Sociology-Anthropology. A thesis is required. University requirements for a master's degree are listed on pages 19-23.

SOCIOLOGY-ANTHROPOLOGY

TEACHING STAFF

Head of the Department: Vernon C. Pohlmann *Office:* Schroeder Hall 365

Professors: Benjamin J. Keeley, Vernon C. Pohlmann

Associate Professors: Stanley E. Grupp, Mark R. Moran

Assistant Professors: Paul J. Baker, David L. Janovy

MASTER'S DEGREE IN SOCIOLOGY

The department offers work leading to the following degrees in sociology: M.A., M.S., M.S. in Ed. The 32 hours of graduate work includes five hours of Thesis. Specific course requirements are Sociology 466 (Seminar in Sociological Theory), Sociology 497 (Seminar in Sociological Research), and three hours of Statistics at either the 300 or 400 level. University requirements for the master's degree are listed on pages 19-23.

MASTER'S DEGREE IN SOCIAL SCIENCES

The department offers work jointly with the departments of economics, history, and political science, leading to the following degrees: M.A., M.S., M.S. in Ed. The program is interdisciplinary, including courses in two or possibly three of the social sciences (economics, history, political science, sociology-anthropology). A thesis is required. University requirements for the master's degree are listed on pages 19-23.

COURSES IN ANTHROPOLOGY

306 *Regional and Area Studies* 1-9 sem. hrs.

An intensive study of particular lands, environments, cultures, and peoples. May be given in cooperation with other departments, on or off campus. The areas to be studied, participating departments, and credit hours available in the several departments, will be announced each time the course is offered.

382 *The American Indian* 3 sem. hrs.

Analysis of the social, economic, religious, and artistic developments of various representative American Indian societies. Environmental and historical factors shaping these ways of life; particular attention to Indians as they are today—their reservation cultures, the federal policies toward them, and their future prospects. Prerequisite: Anthropology 181 or Sociology 106.

383 *Selected Studies in the Cultures of Areas* 3 sem. hrs.

Concentrated study of cultural patterns of selected areas. Introduction to the physical characteristics and history of the aboriginal peoples and study of their social, political, and intellectual life. An analysis of the dynamics of culture change together with the human problems resulting from these changes. Prerequisite: Sociology 106 or 181.

384 *Selected Studies in Anthropology* 3 sem. hrs.

The field of study will vary each semester according to the needs and interests of the students and the availability of instructors. Provided different material is covered, the course may be taken for credit more than once.

COURSES IN SOCIOLOGY

323 *Child Welfare Services* 3 sem. hrs.

Examination of policies, personnel, facilities, and practices for the care of dependent, neglected, delinquent, physically-handicapped, and mentally-retarded children. Consideration given to adoptive procedures, foster-home placements, probation, parole, and vocational placements.

340 *Statistics I* 3 sem. hrs.

Basic statistics used in education and the behavioral sciences. Intensive study of frequency distributions, measures of central tendency and dispersion, and standard scores. Sampling error theory, simple hypothesis testing, correlation techniques, and regression analysis are also covered. The emphasis is on application and interpretation. Prerequisite: Sociology 106 or Psychology 111.

360 *Small Groups* 3 sem. hrs.

Study of the structure and functioning of small human groups. Special attention to conditions affecting interaction in small groups, the small group as an ongoing social system, and products of interaction in a small group. Limited research project. Prerequisite: Sociology 166 or other introductory course in Social Psychology.

365 *Juvenile Delinquency* 3 sem. hrs.

Delinquency as a social and legal problem; theories of delinquency, causation; the juvenile court; prevention and treatment. Prerequisite: Sociology 106.

366 *Contemporary Social Movements* 2 sem. hrs.

Analysis of social unrest as indicative of social disorganization; patterns of collective behavior; structure and functions of social movements. An examination of various types of social movements—religious, political, revolutionary, youth, agrarian, and reform. Analysis of mores, strategy, types of leaders, and control mechanisms.

367 *Criminology* 3 sem. hrs.

Criminological theory and practice. Crime as a social and legal problem. Problems in the administration of justice. Prerequisite: Sociology 263.

368 *Public Opinion and Propaganda* 3 sem. hrs.

The study of public opinion as a part of the communication process. The formation, properties, and distribution of public opinion. Includes attitude formation, psychological processes, opinion change, mass media, measurement. Attention given to the relation of public opinion to the political decision-making process. May be considered as political science or sociology. Prerequisite: Sociology 106 or Political Science 105.

369 *Selected Studies in Sociology* 3 sem. hrs.

The field of study will vary each semester according to the needs and interests of students and the availability of instructors. Provided different material is covered, the course may be taken for credit more than once. Prerequisite: Consent of the instructor.

370 *History of Sociological Thought* 3 sem. hrs.

Analysis and appraisal of classical works in sociology from Comte to the early twentieth century. Such men as Weber, Durkheim and Marx will be discussed. Prerequisite: Sociology 106.

371 *Introduction to Sociological Research* 3 sem. hrs.

A one-semester introduction to sociological research focusing on the convergence of theory and research in sociology; the design of inquiry conceptualization and measurement of social variable, collection of data, analysis and interpretation of data. Emphasis is upon the survey design. Individual and collective research projects form a part of the course. Prerequisite: Sociology 106 or Political Science 105.

440 *Statistics II* 3 sem. hrs.

The logic of statistical inference. An examination of the statistical techniques most commonly employed in research in education and the behavioral sciences. Topics included are interval estimation, the *t* and *f* tests, *chi-square*, one factor analysis of variance, multiple regression, and non-parametric statistics. The emphasis is on application and interpretation. Prerequisite: Sociology 340.

441 *Experimental Design* 3 sem. hrs.

The statistical principles of experimental design. Selection, analysis, and interpretation of the most widely employed designs are emphasized. Designs included are simple randomised, factorial, repeated measures, randomized blocks, latin square, and analysis of covariance. Topics such as multiple comparisons, power, and trend analysis are also covered. Prerequisite: Sociology 440.

461 *Readings in Sociology and Anthropology* 1-3 sem. hrs.

A course for the graduate student who would benefit more from a specialized independent type of study adapted to his background and needs. To be taken by permission of the head of the department and the instructor involved.

465 *Sociology of Formal Organization* 3 sem. hrs.

Analysis of the theory of social groups with special emphasis on formal, complex, and bureaucratic organizations; emergence of informal patterns.

466 *Sociological Theory* 3 sem. hrs.

Social theorists and their theories—Comte, Cooley, Durkheim, Giddings, Gumplowicz, Le Bon, Ratzenhofer, Ross, Small, Spencer, Sumner, Tardé, Thomas, and Ward—will be related to and integrated with educational policies.

469 *Seminar in Sociology* 3 sem. hrs.

Advanced study for graduate students interested in developing theoretical models or in special research topics in sociology. Provided different material is covered, the course may be taken for credit more than once.

491 *Internship-Seminar in College Teaching in Sociology-Anthropology* 3 sem. hrs.

Credit for the course is given in Education (see Education 491).

497 *Research Seminar* 1-6 sem. hrs.

Introduction to bibliography, methods of scholarly research and the critical evaluation of research in the field. Must be taken by first year graduate students unless the department requires Education 475. May be repeated by more advanced students who desire direction and constructive criticism as they pursue special research problems.

499 *Independent Research for the Master's Thesis* 1-6 sem. hrs.

A student electing the thesis option must take from five to six hours of 499. A proposal for research must be on file before registration for this course is approved by the student's adviser. While registration beyond six hours may be permitted for the convenience of the student, he may not count more than a total of six hours of 499 among the 32 required for the master's degree.

SPANISH
(See Foreign Languages)

SPECIAL EDUCATION
(See Education)

SPEECH

TEACHING STAFF

Head of the Department: Charles A. White. *Office:* Centennial Building East 286.

Professors: G. Bradford Barber, James Ching, Dorothy Eckelmann, Stanley G. Rives, Ralph Smith, George Soderberg, Glenn Taylor, Charles A. White

Associate Professors: Edward A. Andreasen, Gary L. Cronkhite, Charles E. Howard, Barbara Hutchinson, John Kirk, Calvin Pritner, Jean Scharfenberg

Assistant Professors: Robert Lupella, Steven Vargo

The department offers work leading to the following degrees: M.A., M.S., M.S. in Ed. Students may plan programs with an emphasis in drama, in rhetoric and public address, in audiology, or in speech correction.

The candidate for the master's degree in audiology or in speech correction must meet the academic requirements for the American Speech and Hearing Association for clinical competency. If he also desires certification for the public schools in Illinois, he must also meet these requirements.

University requirements for the above degrees are listed on pages 19-23.

COURSES

300 *History of the Motion Picture* 3 sem. hrs.

The development and appreciation of the motion picture from its beginning to the present, with emphasis upon social backgrounds and cultural-artistic values. *Laboratory:* screening of significant films from various periods and countries.

311 *Phonetics* 3 sem. hrs.

Sound system of American speech and its standard and sub-standard variations. Practice in transcribing and reading phonetic symbols.

316 *Introduction to Organic Disorders of Speech* 3 sem. hrs.

Speech disorders related to structural, neurological, and endocrine pathologies. Emphasis on diagnostic and remedial procedures. Approximately 20 hours of clinical participation required. *Prerequisite:* Speech 212 or 215.

317 *Speech Clinic* 1-6 sem. hrs.

Diagnostic tests and methods of speech correction applied to those enrolled in the Speech Correction Clinic. Students enrolling in this course should have the permission of the instructor. *Prerequisite:* Speech 212 or 215.

318 *Organization of the School Speech Correction Program* 3 sem. hrs.

Professional attitudes, ethics, and organizations. History and development of the program in the schools. Procedures for setting up and maintaining the program. Evaluation and therapy techniques and material applicable to the school setting. Relationship to school and community agencies.

319 *Stuttering I* 3 sem. hrs.

Introductory course in stuttering, including the nature and history of the disorder, current theories as to etiology, basic therapeutic techniques, and observations of therapy. Clinical procedures in speech stressed. Prerequisite: Speech 212 or 215 or consent of the instructor.

321 *Speech Composition* 3 sem. hrs.

Theory and practice in demonstrative, deliberative, and forensic address through a study of theories of style and historically significant models.

324 *Theory and Research in Persuasion* 3 sem. hrs.

A survey of theoretical and experimental literature dealing with the question of how an individual's attitudes, beliefs, and social behavior may be affected by communication.

328 *American Public Address* 3 sem. hrs.

History and criticism of public address in the United States with special attention to important issues and speakers.

330 *Advanced Stage Lighting* 3 sem. hrs.

The study of lighting design for complex proscenium and non-proscenium production with attention to system design. Prerequisites: Speech 135 and 136 and consent of the instructor.

333 *Modern Theatre* 3 sem. hrs.

Trends in dramatic literature and theatrical production from Ibsen to the present day. Reading reports and discussions of the plays of the leading dramatists of Europe, Great Britain, and America.

334 *History and Styles of Stage Costuming* 3 sem. hrs.

Concentrated history of costumes from the ancient Egyptian period to the present time. Emphasis on the costume's reflection of cultural and social milieu. Consideration of the costume's practical application to the stage. Laboratory to be arranged with the instructor. Prerequisite: Speech 134.

335 *History of the Theatre* 3 sem. hrs.

Background for the study and production of plays including the reading of great plays of different historical periods, a study of the manner in which they were produced, and their relation to the cultural life of the time.

336 *Problems in Acting* 3 sem. hrs.

Introduction to and practice in the various advanced styles of acting prevalent in the more important periods of theatrical history and native to specific forms of comic and serious drama. Laboratory to be arranged with instructor. Prerequisite: Speech 132.

337 *Problems in Directing* 3 sem. hrs.

Theories and techniques of directing plays of differing forms, styles, and historical periods. Concentration on various aesthetic principles involved in directing different types of theatres. Laboratory to be arranged with instructor. Prerequisites: Speech 131 and 133.

340 *Advanced Design* 3 sem. hrs.

Intensive work in the areas of design and rendering for the stage, with emphasis upon new materials and techniques. Prerequisite: Speech 231.

341 Advanced Oral Interpretation of Literature 3 sem. hrs.

The oral study of selected types of literature with emphasis upon drama and poetry; projects in organizing materials; presentation of individual and multiple reading projects. Prerequisite: Speech 141.

345 Development of Modern Theatre 3 sem. hrs.

Developments in stagecraft, directing, acting, and theatrical theory from the late nineteenth century to the present. Prerequisites: None except those for a 300 level course.

348 Playwriting 3 sem. hrs.

Playwriting techniques of selected masters of dramaturgy, with practical application of the techniques in the writing of original plays. Both literary and professional aspects of writing for the theater will be considered. When possible, opportunity will be provided for the laboratory production of original scripts of quality in University theater-workshop projects. This course is also offered as English 348.

350 Basic Audiology 3 sem. hrs.

Methods of screening hearing; basic equipment and methods for the measurement of various aspects of the hearing function; causes of hearing loss; interpretation of test results. Practicum will be required, consisting of approximately eight hours of participation in hearing surveys in public schools and activities of the Hearing Laboratory, in addition to independent practice and testing.

351 Speech Reading and Auditory Training 3 sem. hrs.

Principles and practices of speech reading and auditory training. Survey of traditional methods. Communication disorders arising from hearing impairment; the visual and auditory speech stimuli. The operation and use of hearing aids and auditory training equipment. Five hours of participation outside of class time required. Prerequisites: Speech 215 and 311.

352 Professional Practice in Speech Reading and Auditory Training 1-3 sem. hrs.

Practice in providing speech reading training and auditory training for children and adults in group and individual situations. Consideration of instructional materials, equipment, and special problems of habilitation and rehabilitation for the hearing impaired. Prerequisite: Speech 351.

358 Practicum in Basic Audiology 1-3 sem. hrs.

Supervised clinical practice in basic procedures used in audiology. For each semester hour of credit, at least 45 clock hours of practice will be required. Prerequisite: Consent of instructor.

360 Mass Communication in Society 3 sem. hrs.

A study of the mass media of communication—an explanation of the several media (press, radio, television, films) emphasizing their aesthetic and communicative possibilities, social responsibilities, structure, problems of regulation and management, and educational-entertainment-commercial content.

361 The Regulation of Broadcasting 3 sem. hrs.

A study of Federal and State legislation concerning communications media in relation to the codes of practice of broadcasters with emphasis on the rights, privileges and responsibilities—ethical as well as legal—of the radio-tv industry. Prerequisite: Consent of the instructor.

362 Instructional Television 3 sem. hrs.

Television as a medium of instruction: history, forms, techniques, utilization, evaluation, function in education. Prerequisite: Consent of instructor.

370 *Psycholinguistics* 3 sem. hrs.

A survey of theories and experimental research relating to the development and functions of language within the individual, including contributions from the fields of speech, psychology, linguistics, and communication.

371 *Speech Science* 3 sem. hrs.

Principles of physics involved in the production and reception of spoken language.

372 *Anatomy and Physiology of the Speech and Hearing Mechanism* 3 sem. hrs.

A study of the mechanism used in producing and receiving speech; the function of a normal mechanism and the effect that deviations from this may have on the end product. Prerequisite: Biological Sciences 181.

381 *Problems in the Teaching of Speech* 2 sem. hrs.

Present trends in the teaching of speech and evaluation of current teaching materials.

414 *Voice and Articulation Disorders* 3 sem. hrs.

Recent developments and research related to organic and functional disorders of voice and articulation. Prerequisites: Speech 215, Speech 311, and Speech 372 or equivalent.

415 *Seminar in Language Disorders* 2 sem. hrs.

Prerequisite: Speech 212 or 215.

417 *Clinical Practice in Speech Correction* 1 to 6 sem. hrs.

Supervised work with speech disorders of various types. Prerequisites: Speech 212 or 215, study of phonetics and clinical services, previous clinical experience, and consent of Director of Clinic.

418 *Stuttering* 3 sem. hrs.

Study of the research relating to stuttering and of methods of examination, diagnosis, and remedial procedures. Prerequisite: Speech 319.

419 *Aphasia* 3 sem. hrs.

This course is designed to provide the student with a knowledge of the past and current research and theory on the etiologies, diagnoses of, and therapies for aphasia in children and adults. Emphasis is on diagnostic and remedial procedures.

421 *Selected Studies in Rhetoric and Public Address* 1-3 sem. hrs.
The field of study will vary each semester according to interests and needs of students. Units include: Medieval and Renaissance rhetorical theory, British and American rhetorical theory, British public address, contemporary public address, and special problems in rhetoric and the history and criticism of public address. Provided different material is covered, the course may be taken for credit more than once.

423 *The Process of Communication* 3 sem. hrs.

A study of the process of communication as it occurs between two individuals, in small groups, in organizations, and in mass societies. The study will cover theoretical and research literature from the fields of speech, psychology, sociology, and communication.

424 *Seminar in Persuasion* 3 sem. hrs.

A Study of special topics in persuasion. May be repeated if different material is covered. Prerequisite: Speech 324 or consent of the instructor.

425 *Seminar in Argumentation and Forensics* 2 sem. hrs.
Advanced study in argumentation and debate theory with attention to the problems of directing a forensics program.

426 *Classical Rhetoric* 3 sem. hrs.
Ancient rhetoricians from Corax to Quintillian, with special emphasis upon the works of Aristotle and Cicero.

427 *Rhetorical Criticism* 3 sem. hrs.
Critical consideration of rhetorical and psychological principles involved in meeting speech situations.

431 *Theatres and Auditoriums: Planning and Design* 3 sem. hrs.
Technical problems in stage and auditorium design and planning, with special emphasis on stage, lighting, and sound equipment and control. Laboratory to be arranged with the instructor. Prerequisite: Speech 131.

435 *The British Theatre* 3 sem. hrs.
Trends in dramatic literature and theatrical productions in England from the Restoration period to the present time.

436 *The American Theatre* 3 sem. hrs.
Development of the theatre, its dramatic literature and its arts and crafts, in America from its beginning to the present time.

438 *Drama Theory and Criticism* 3 sem. hrs.
Theory of dramatic technique and criticism in Europe, England, and America from classical times to the present. Concentration on major writings of leading influential theorists and their relationship to the development of drama and theatre. Further emphasis on current trends and problems in dramatic criticism. Opportunities afforded for practice in drama criticism.

439 *Drama Form* 3 sem. hrs.
Major serious and comic drama forms in the theatre: tragedy, comedy, melodrama, farce, and their variants. Stress on origins, backgrounds, elements, influences, and effects of the various drama forms and their creators in western theatre from classical times to the present. Reading, analysis, and critique of several representative plays exemplifying serious and comic forms studied.

440 *Selected Studies in Drama and Theatre* 1-5 sem. hrs.
The field of study will vary each semester according to interests and needs of students. Units include: aspects of drama form and their application to modern and traditional theatre practice, drama theory and criticism, theatre history, and special problems in dramatic production.

441 *Directed Readings in Speech Pathology* 1-3 sem. hrs.
For the student who would benefit from specialized independent study which can be adapted to his background and needs. Permission to enroll should be secured from the student's adviser and the instructor involved. May be repeated with a maximum of 3 hours credit. Prerequisites: Evidence of substantial background in speech pathology.

443 *Symposium in Audiology or Speech Pathology* 1-6 sem. hrs.
For the experienced professional person in speech pathology and/or audiology or for advanced graduate students. May be repeated up to 6 hours. Prerequisites: Consent of the director of the symposium.

444 *Neuropathologies of Speech* 3 sem. hrs.

The nature and types of neuropathologies that have an effect on speech production, with particular emphasis given to cerebral palsy. Content intended to familiarize the student with evaluation and treatment of speech disorders arising from neurological impairment. Prerequisites: Speech 319 or equivalent.

445 *Oro-Facial Anomalies and Associated Speech Disorders* 2 sem. hrs.

Embryological growth and development and the etiologies, diagnostic, and rehabilitative procedures for cleft lip and palate and associated congenital anomalies. Prerequisites: Speech 215 and Speech 316 (Introduction to Organic Disorders of Speech) or equivalent.

450 *Clinical Evaluation of Hearing* 3 sem. hrs.

The rationale, application, and interpretation of advanced testing procedures; evaluation of research. Students may acquire up to approximately 50 clock hours of laboratory experience in addition to the academic requirement above. Prerequisite: Speech 350 or equivalent.

451 *Seminar in Audiology* 2-6 sem. hrs.

Specific topics selected by the student with approval of the instructor, or assigned topics will be explored. In general, library resources will be employed; however, some experimental procedures may be approved. The student may repeat the seminar for credit provided that the subject matter is not duplicated and the total credit earned does not exceed six semester hours.

452 *Communication Disorders of the Hearing Impaired* 3 sem. hrs.
The examination of the theories and principles underlying the clinical management of communication disorders resulting from and related to hearing impairment. Approximately 50 clock hours of practicum will be required in addition to the academic work. This will include supervised, semi-independent clinical evaluation and therapy with hearing impaired individuals displaying more difficult problems including multiple handicapped. Prerequisite: Consent of the instructor.

455 *Pathologies of Hearing* 3 sem. hrs.

A review and study of the literature in audiology and otology on the etiology and loci of pathology in the auditory system revealed by oto-audiological tests. Prerequisite: Consent of the instructor.

456 *Auditory Functions* 3 sem. hrs.

Anatomy of the ear; function of the auditory mechanism as evidenced by various methods of investigation; theories of hearing; implications from pathological conditions; anatomical and physiological. Prerequisite: Consent of the instructor.

457 *Psychological Implications of Hearing Impairment* 3 sem. hrs.
Lecture, observation and supervised clinical practice in measurement and evaluation as well as counseling of the hearing impaired. Prerequisite: Work in psychometrics and counseling, or consent of the instructor.

458 *Practicum in Audiology* 1-4 sem. hrs.

Supervised experience in all aspects of audiology. Emphasis in one or more aspects will be permitted to suit the objectives of the student. The student may enroll more than once if the subject matter is not duplicated and the total credit earned does not exceed six semester hours. Prerequisite: Speech 350 or similar experience.

461 *Selected Studies in Radio and Television* 3 sem. hrs.

The field of study will vary according to student needs and interests. Areas to be considered will include broadcasting criticism, audience formation and reaction to educational and commercial broadcasting, problems posed by the media.

471 *Experimental Phonetics* 2 sem. hrs.

Laboratory course in the study of phenomena prevailing in and accompanying the production of spoken language.

481 *Seminar in Speech Education* 2 sem. hrs.

491 *Internship-Seminar in College Teaching in Speech* 3 sem. hrs.
Credit for the course is given in Education (see Education 491).

497 *Research Seminar* 1-6 sem. hrs.

Introduction to bibliography, methods of scholarly research and the critical evaluation of research in the field. Must be taken by first year graduate students unless the department requires Education 475. May be repeated by more advanced students who desire direction and constructive criticism as they pursue special research problems.

499 *Independent Research for the Master's Thesis* 1-6 sem. hrs.

A student electing the thesis option must take from four to six hours of 499. A proposal for research must be on file before registration for this course is approved by the student's adviser. While registration beyond six hours may be permitted for the convenience of the student, he may not count more than a total of six hours of 499 among the 32 required for the master's degree.

WESTERN EUROPEAN STUDIES

Coordinator: David L. Wheeler.

Office: Hovey Hall 110

The Western European Studies program is offered by the College of Arts and Sciences and leads to the degree of Master of Arts. The program is designed for students who wish to pursue international careers in business or in the foreign service as well as for those who want a deeper understanding of Western European affairs. The program consists of intensive training in a modern European language and course work in economics, geography, history, and political science. A study tour will be made of the leading industrial, political, and educational institutions of Western Europe.

ZOOLOGY

(See Biological Sciences)

WORKSHOPS

393 *Workshop* 1-6 sem. hrs.

Advanced workshop for juniors, seniors, and graduate students. Credit will be given by the department offering the workshop.

397 *Institute in* 1-9 sem. hrs.

Federal and state sponsored institutes or similar short term programs requiring treatment of subject matter of a special nature or for special groups.

Faculty

The date in parentheses shows the year the person joined the staff of this University.

RICHARD E. ALLEN, Ph.D. (1963)	Associate Professor of English
ROBERT M. ANDERSON, Ed.D. (1967)	Associate Professor of Special Education
EDWARD A. ANDREASEN, M.A. (1967)	Associate Professor of Speech
WILLIAM D. ASHBROOK, Ph.D. (1947)	Professor of Industrial Technology
ERIC BABER, Ed.D. (1965)	Associate Director of the University Foundation
	Director of the Office of Sponsored Research Services
	Professor of Education
PAUL J. BAKER, Ph.D. (1965)	Assistant Professor of Sociology
G. BRADFORD BARBER, Ph.D. (1944)	Professor of Speech
GEORGE BARFORD, M.A. (1947)	Associate Professor of Art
BUFORD H. BASS, Ed.D. (1951)	Assistant Professor of Health and Physical Education
GERALD L. BECKER, Ed.D. (1967)	Associate Professor of Educational Administration
CLAUDE A. BELL, Ed.D. (1956)	Associate Professor of Industrial Technology
RALPH A. BELLAS, Ph.D. (1965)	Associate Professor of English
FRANCIS B. BELSHE, Ph.D. (1948)	Associate Dean of Faculties
DOUGLAS R. BEY, Ph.D. (1944)	Professor of Education
ALLIE WARD BILLINGSLEY, Ph.D. (1949)	Professor of Mathematics
DALE E. BIRKENHOLZ, Ph.D. (1962)	Professor of Spanish
FERMAN BISHOP, Ph.D. (1960)	Associate Professor of Ecology
LAWRENCE E. BITCON, Ed.D. (1965)	Professor of English
E. SCOTT BLANKENSHIP, Ph.D. (1956)	Assistant Professor of Health and Physical Education
ROGER D. BLOMGREN, Ed.D. (1949)	Professor of Education
JAMES W. BOMMARITO, Ed.D. (1967)	Acting Head of the Department of Industrial Technology
ARTHUR BOND, Ph.D. (1966)	Professor of Industrial Technology
RICHARD R. BOND, Ph.D., (1966)	Associate Professor of Special Education
HAROLD J. BORN, Ph.D. (1961)	Associate Professor of Chemistry
HAROLD E. BOYD, M.F.A. (1965)	Vice President of the University and Dean of Faculties
SAMUEL E. BRADEN, Ph.D. (1967)	Professor of Zoology
PAUL J. BRAND, Ed.D. (1958)	Head of the Department of Physics
BENTON K. BRISTOL, D.Ed. (1965)	Professor of Physics
HERMAN E. BROCKMAN, Ph.D. (1963)	Assistant Professor of Art
FRANCIS R. BROWN, Ed.D. (1949)	President of the University
LAUREN E. BROWN, Ph.D. (1967)	Professor of Economics
R. ELIZABETH BROWN, Ph.D. (1955)	Professor of Geography
WALTER H. BROWN, Ph.D. (1955)	Associate Professor of Agriculture
LEONARD A. BRUBAKER, Ph.D. (1964)	Professor of Genetics
CECILIA PEIKERT BUNNEY, Ph.D. (1945)	Director of Extension and Field Services
ROGER BUNTING, Ph.D. (1966)	Professor of Mathematics
GEORGE R. CANNING, Ph.D. (1958)	Assistant Professor of Vertebrate Zoology
JAMES D. CARL, Ph.D. (1963)	Professor of Psychology
LESSIE CARLTON, D.Ed. (1955)	Professor of Botany
DOROTHY H. CARRINGTON, Ed.D. (1961)	Associate Professor of Elementary Education
VALJEAN M. CASHEN, Ed.D. (1961)	Director of Museums and Professor
HELEN M. CAVANAGH, Ph.D. (1946)	Assistant Professor of Chemistry
ROGER J. CHAMPAGNE, Ph.D. (1960)	Professor of English
ROBERT M. CHASSON, Ph.D. (1965)	Associate Professor of Geology
JAMES C. CHING, Ph.D. (1967)	Professor of Education
TSAN-IANG CHUANG, Ph.D. (1967)	Director of Residence Halls for Women
HERBERT E. CLARK, Ph.D. (1966)	Assistant Dean of Women
JAMES E. COLLIE, P.E.D. (1957)	Associate Professor of Psychology
THOMAS E. COMFORT, Ph.D. (1965)	Associate Professor of Psychology
	Professor of History
	Head of the Department of History
	Associate Professor of Botany
	Professor of Speech
	Associate Professor of Botany
	Associate Professor of Psychology
	Professor of Health and Physical Education
	Head of the Department of Foreign Languages
	Professor of French

ARNOLD C. CONDON, Ph.D. (1964)	Acting Head of the Department of Business Education
CARROL B. COX, Ph.D. (1961)	Professor of Business Education
VIRGINIA R. CRAFTS, Ed.D. (1967)	Assistant Professor of English
JOHN C. CRALLEY, Ph.D. (1963)	Associate Professor of Health and Physical Education
JOHN E. CREW, Ph.D. (1963)	Assistant Professor of Zoology
ROBERT L. CRIST, Ph.D. (1962)	Associate Professor of Physics
GARY L. CRONKHITE, Ph.D. (1967)	Professor of Psychology
RICHARD D. CRUMLEY, Ph.D. (1962)	Associate Professor of Speech and Psychology
ALFRED A. CULVER, Ph.D. (1961)	Associate Professor of Mathematics
DEVERNE H. DALLUGE, Ed.D. (1947)	Associate Professor of Agriculture
LILLIAN S. DAVIES, Ph.D. (1963)	Professor of the Teaching of Physics
ELEANOR DILKS, Ph.D. (1952)	Associate Professor of Elementary Education
PAUL F. DOHRMANN, Ph.D. (1961)	Professor of Zoology
PAULINE DRAWVER, Ph.D. (1956)	Associate Professor and Supervising Teacher of Health and Physical Education
GEORGE M. DREW, Ph.D. (1962)	Associate Professor of English
ROBERT L. DUNCAN, Ph.D. (1961)	Professor of Elementary Education
ROBERT C. DUTY, Ph.D. (1963)	Associate Professor of English
LEO E. EASTMAN, Ed.D. (1954)	Professor of Chemistry
ALICE L. EBEL, Ph.D. (1934)	Head of the Department of Education
DOROTHY ECKELMANN, Ph.D. (1945)	Professor of Education
CHARLES W. EDWARDS, Ph.D. (1964)	Head of the Department of Political Science
THOMAS F. EDWARDS, Ed.D. (1957)	Professor of Political Science
ELWOOD F. EGELSTON, D.Ed. (1962)	Director of Speech Clinic
ALICE M. EIKENBERRY, Ed.D. (1945)	Professor of Speech
RALPH A. ELLIOTT, M.D., (1963)	Administrative Assistant to the Vice President of the University and Dean of Administrative Services
RAYMOND W. ESWORTHY, Ph.D. (1949)	Associate Professor of Education
G. HARLOWE EVANS, Ph.D. (1946)	Associate Professor of Chemistry
LLOYD E. FARLEE, Ph.D. (1962)	Professor of Educational Administration
DOROTHY E. FENSHOLT, Ph.D. (1951)	Professor of the Teaching of History
A. GORDON FERGUSON, Ph.D. (1964)	Assistant Director of University Health Services
JOHN W. FERRELL, Ph.D. (1961)	Professor
HOWARD I. FIELDING, Ph.D. (1944)	Coordinator of Budgets
JAMES L. FISHER, Ph.D. (1960)	Professor of Accounting
KENNETH L. FITCH, Ph.D. (1963)	Professor of Chemistry
EUGENE D. FITZPATRICK, Ed.D. (1965)	Associate Professor of Music
D. FRANK FOX, Ph.D. (1967)	Professor of Botany
JOHN L. FREHN, Ph.D. (1962)	Associate Professor of Spanish
BERNICE G. FREY, Ph.D. (1930)	Associate Professor of Music
RUTH M. FREYBERGER, Ed.D. (1951)	Professor of English
WALTER H. FRIEDHOFF, Ph.D. (1958)	Vice President of the University and Dean of Information and Research Services
WILLIAM FRINSKO, Ed.D. (1961)	Executive Assistant to the President
WILLIAM D. FUEHRER, Ph.D. (1963)	Associate Professor of Psychology
FREDERICK W. FUESS, Ph.D. (1963)	Associate Professor of Anatomy
VYTAS V. GAIGALAS, Ph.D. (1965)	Director of Computer Center
HAROLD E. GIBSON, Ed.D. (1950)	Associate Professor of Psychology
ARLEY FREDERICK GILLETT, P.E.D. (1944)	Assistant Professor of Mathematics
	Associate Professor of Physiology
	Professor of Health and Physical Education
	Professor of Art
	Head of the Department of Psychology
	Professor of Psychology
	Professor of Elementary Education
	Associate Professor of the Teaching of German
	Associate Professor of Agriculture
	Associate Professor of French
	Vice President of the University and Dean of Special Services
	Director of Bureau of Appointments
	Professor of Education
	Head of the Department of Health and Physical Education for Men
	Director of Athletics
	Professor of Health and Physical Education

VICTOR E. GIMMESTAD, Ph.D. (1948)	Professor of English
WILLIAM J. GNAGEY, Ph.D. (1961)	Professor of Psychology
MIRIAM GRAY, Ed.D. (1946)	Professor of Health and Physical Education
IVO P. GREIF, Ed.D. (1961)	Professor of Elementary Education
STANLEY E. GRUPP, Ph.D. (1957)	Associate Professor of Sociology
KWANG CHUL HA, Ph.D. (1967)	Associate Professor of Mathematics
DEAN S. HAGE, Ph.D. (1959)	Professor of Special Education
BARBARA C. HALL, Ed.D. (1957)	Professor of Health and Physical Education
JAMES A. HALLAM, Ph.D. (1966)	Associate Professor of Management
WARREN R. HARDEN, Ph.D. (1954)	Coordinator of Academic Planning
CLARENCE W. HARDIMAN, Ph.D. (1964)	Head of the Department of Economics
HOWARD N. HARRISON, Ph.D. (1967)	Professor of Economics
RICHARD R. HART, Ph.D. (1961)	Associate Professor of Physiology
DOUGLAS HARTLEY, M.F.A. (1954)	Associate Professor of Physiology and Health Sciences
JOHN M. HEISSLER, Ph.D. (1961)	Associate Professor of Geology
ARLAN C. HELGESON, Ph.D. (1951)	Assistant Professor of Art
ROBERT E. HEMENWAY, Ed.D. (1964)	Associate Professor of English
RUTH HENLINE, Ph.D. (1926)	Dean of the Graduate School
HENRY J. HERMANOWICZ, Ed.D. (1959)	Professor of History
HOWARD R. HETZEL, Ph.D. (1962)	Associate Professor of Special Education
CHARLES R. HICKLIN, Ed.D. (1960)	Professor of English
G. ALAN HICKROD, Ed.D. (1967)	Dean of the College of Education
EUGENE L. HILL, Ed.D. (1930)	Professor of Education
JOHN S. HILL, Ph.D. (1962)	Professor of Zoology
ROBERT A. HOGAN, Ed.D. (1963)	Professor of Education
FRANK J. HOLMES, Ph.D. (1962)	Associate Professor of Educational Administration
F. LOUIS HOOVER, Ed.D. (1944)	Professor of Health and Physical Education
CHARLES E. HOWARD, M.F.A. (1967)	Professor of English
QUINN L. HRUDKA, Ed.D. (1962)	Associate Professor of Psychology
BENJAMIN C. HUBBARD, Ed.D. (1961)	Head of the Department of Art
WAYNE V. HUEBNER, Ph.D. (1960)	Professor of Art
HARRY W. HUIZINGA, Ph.D. (1967)	Associate Professor of Speech
RICHARD E. HULET, Ed.D. (1956)	Supervisor of Off-Campus Student Teaching
RAYMOND H. HUNT, Ph.D. (1965)	Associate Professor of Education
BARBARA B. HUTCHINSON, Ph.D. (1966)	Head of the Department of Educational Administration
THADDEUS C. ICHNIEWSKI, Ph.D. (1961)	Professor of Educational Administration
LESLIE M. ISTERD, Ph.D. (1940)	Associate Professor of English
HOWARD J. IVENS, Ph.D. (1934)	Assistant Professor of Parasitology
JEANNIE H. JAMES, D.Ed. (1959)	Vice President of the University
KENNETH E. JAMES, Ed.D. (1962)	Dean of Student Services
DAVID JANOVY, Ph.D. (1964)	Professor of Education
D. REED JENSEN, Ph.D. (1966)	Associate Professor of Chemistry
MILFORD C. JOCHUMS, Ph.D. (1948)	Associate Professor of Speech
BLOSSOM JOHNSON, Ed.D. (1945)	Professor of Chemistry
ERIC H. JOHNSON, Ed.D. (1958)	Professor of Music
JAMES J. JOHNSON, Ph.D. (1966)	Director of Admissions and Records
JOHN L. JOHNSTON, Ed.D. (1956)	Professor of Physics
MARGARET L. JONES, Ph.D. (1956)	Associate Professor of Home Economics
FREDERICK D. KAGY, Ed.D. (1965)	Associate Professor of Agriculture
JACQUELINE Q. KARCH, Ed.D. (1957)	Assistant Professor of Sociology
	Assistant Professor of Physiology
	Professor of English
	Acting Head of the Department of Home Economics
	Professor of Home Economics
	Vice President of the University and
	Dean of Administrative Services
	Professor of Educational Administration
	Assistant Professor of Psychology
	Professor of Industrial Technology
	Professor of Health and Physical Education
	Associate Professor of Industrial Technology
	Associate Professor of Home Economics

ANNA LUCILE KEATON, Ph.D. (1937)	Special Consultant to the Vice President of the University and Dean of Students Professor of English
BENJAMIN J. KEELEY, Ph.D. (1952)	Adviser for Social Science Majors Professor of Sociology
ELLEN D. KELLY, Ph.D. (1957)	Professor of Health and Physical Education
BETTY JEAN KEOUGH, Ph.D. (1955)	Associate Professor of Health and Physical Education
JOHN H. KIRCHNER, Ph.D. (1964)	Associate Professor of Psychology
JOHN W. KIRK, Ph.D. (1966)	Director of University Theatre Associate Professor of Speech Professor of Education
HOMER T. KNIGHT, Ed.D. (1957)	Professor of Management
HAROLD F. KOEPKE, Ph.D. (1934)	Associate Professor of History
FRED W. KOHLMAYER, Ph.D. (1964)	Professor of Political Science
WALTER S. G. KOHN, Ph.D. (1956)	Director of Libraries
JOE W. KRAUS, Ph.D. (1966)	Professor of Library Science Professor of French
BRIGITTA J. KUHN, Ph.D. (1961)	Associate Professor of Education
CLARENCE H. KURTH, Ed.D. (1951)	Professor of the Teaching of Geography
KERMIT M. LAIDIG, Ph.D. (1955)	Consultant for Institutional Studies
ARTHUR H. LARSEN, Ph.D. (1935)	Distinguished Professor of Higher Education
CECILIA J. LAUBY, Ed.D. (1949)	Head of the Department of Professional Laboratory Experiences Professor of Education Professor of Spanish
JOSEPH L. LAURENTI, Ph.D. (1962)	Associate Professor of Elementary Education
RONALD L. LAYMON, Ed.D. (1965)	Assistant Professor of Psychology
KENNETH L. LEICHT, Ph.D. (1967)	Associate Professor of Psychology Professor of Mycology
ELMER A. LEMKE, Ph.D. (1965)	In Charge of Junior College Curriculum Professor of Education
ANTHONY E. LIBERTA, Ph.D. (1961)	Associate Professor of English
ELDEN A. LICHTY, Ed.D. (1945)	Associate Professor of Special Education
WILLIAM R. LINNEMAN, Ph.D. (1964)	Associate Professor of Education and Psychology
HARRY A. LITTLE, Ed.D. (1964)	Director of University High School Professor of Education
DAVID L. LIVERS, Ed.D. (1964)	Professor of Education
HARRY D. LOVELASS, Ed.D. (1946)	Assistant Professor of Speech
WILLIAM R. LUECK, Ph.D. (1936)	Assistant Professor of Health and Physical Education
ROBERT LUPELLA, Ph.D. (1961)	Associate Professor of Elementary Education
G. LAURENE MABRY, Ph.D. (1960)	Professor of Latin
NORMAND W. MADORE, Ed.D. (1961)	Professor of Botany
HENRY R. MANAHAN, Ph.D. (1961)	Director of Counseling Services Professor of Psychology
J. LOUIS MARTENS, Ph.D. (1947)	Associate Professor of Geography
STANLEY S. MARZOLF, Ph.D. (1937)	Head of the Department of Mathematics Professor of Mathematics
PAUL F. MATTINGLY, Ph.D. (1962)	Professor of Psychology
CLYDE T. MCCORMICK, Ph.D. (1944)	Professor of Botany
GEORGE F. MCCOY, Ph.D. (1962)	School Psychologist in the Metcalf Elementary School Professor of Psychology
LOREN W. MENTZER, Ph.D. (1957)	Professor of Education and Psychology
RALPH A. MEYERING, Ph.D. (1961)	Associate Professor of Geography
E. JOAN MILLER, Ph.D. (1962)	Associate Professor of Education
MURRAY LINCOLN MILLER, Ph.D. (1950)	Associate Professor and Supervising Teacher of Biological Sciences
ORIN J. MIZER, Ph.D. (1947)	Professor of Entomology
EDWARD L. MOCKFORD, Ph.D. (1960)	Professor of Agriculture
CLARENCE L. MOORE, Ph.D. (1961)	Adviser of Non-major Students
ROBERT H. MOORE, Ph.D. (1952)	Professor of Education
MARK MORAN, Ph.D. (1966)	Associate Professor of Social Work in the Department of Sociology-Anthropology
MATHEW J. NADAKAVUKAREN, Ph.D. (1964)	Associate Professor of Botany
HELEN M. NANCE, Ph.D. (1954)	Head of the Department of Elementary Education Professor of Elementary Education

JAMES L. NELSON, Ph.D. (1967)	Assistant Professor of Mathematics
EDWIN C. NIEMI, M.S. (1958)	Associate Professor of Art
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